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Forty-Second Annual Report
of the
State Board of Health
of South Carolina

For the Fiscal Year 1921 to the
Legislature of South Carolina



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COLUMBIA, S. C.
GONZALES AND BRYAN, STATE PRINTERS,
1922

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LETTER OF TRANSMITTAL

Medical College of the State of South Carolina, Charleston, S. C.

February 21, 1921.

Hon. R. A. Cooper, Governor, Columbia, S. C.

Dear Sir: I have the honor to submit for your consideration the Annual Report of the Executive Committee of the State Board of Health.

It is gratifying to call your attention to the decrease in the general death rate and the increase in the birth rate over the previous year. In 1920 the death rate was 14 and the birth rate was 27.2 per 1,000 population, and in 1921 the death rate had fallen to 11.8 and the birth rate had risen to 28.3 per 1,000 of population.

Perhaps the most striking improvement has occurred in the death rate from malaria, which during the past six years has fallen as much as 50%. In some localities the malaria control work has shown extraordinary results. In Bamberg, by way of illustration, 1,087 cases were reported in 1919, entailing an economic loss of \$35,871; while in 1921, 20 cases were reported with an economic loss of \$1,000. In Chester 411 cases were reported in 1919, and the estimated economic loss was \$21,154, while in 1921 only 2 cases were reported with an economic loss of \$100.

The activities of the Bureau of Child Hygiene have brought about a decrease of 14% in the number of deaths from pregnancy and parturition and a marked decrease in the deaths from intestinal diseases during the first year of life in both white and colored children, the total saving being 1,196 children.

The Department of Rural Sanitation and County Health Work has achieved splendid results, as shown by Dr. Riser's report, notwithstanding a two-thirds reduction in the appropriation for this specific purpose. The work of this department has covered a wide range; 1441 house have been sanitated, 953 homes have been screened, 32,562 vaccinations against smallpox were made, 12,903 inoculations against typhoid fever were given, 14,757 school children were examined of whom 7,198 were

found defective, 846 defective children were treated and an extensive educational work was carried on by means of lectures, bulletins, letters and visits to homes. A lower death rate and improved health conditions are noted in all counties in which the department has been able to operate.

The work of the epidemiologist merits special comment. This official has visited nearly every town in the state investigating outbreaks of contagious diseases, and his efforts have had a most important influence in limiting the spread of smallpox and other infectious maladies.

No more important work can be undertaken than the prevention and cure of venereal diseases. There is no group of diseases which contributes in larger measure to the destruction of life as well as to physical and mental unfitness, and whose malign effects are so far reaching and which involve so many innocent persons. The report of Dr. Akin sets forth in detail what has been accomplished by the Division of Venereal Disease Control and it is commended to your thoughtful consideration. It is essential that everything possible be done to control these devitalizing diseases if a high state of mental and physical efficiency is to be maintained.

The reports of the Sanitary Engineer, the Director of the Laboratory and the Director of the Sanatorium for the treatment of tuberculous patients show efficiency of service in these very important fields of activity.

A very important part of the work of the Board of Health is educational. Bulletins should be published and widely distributed concerning the causes of disease and the means of preventing them. It is unfortunate that we have been unable to carry out this work on account of inadequate appropriations.

The work of conserving life and of preserving the health of its citizens is fundamental to the progress of every state and nothing should be done to curtail in the smallest degree the activities of the Board of Health. The report submitted shows a very high degree of efficiency in every field and a measure of accomplishment in the prevention of disease which is out of proportion to the amount expended. It is most respectfully urged that the appropriation requested for 1922 be granted in full or otherwise it will be difficult, if not impossible, to maintain the present high standards.

Respectfully,

ROBERT WILSON, JR., M. D.

Chairman, Executive Committee, State Board of Health.

GENERAL REPORT

This is the forty-second annual report of the Executive Committee of the State Board of Health, and is for the year ending December 31, 1921.

This report is made in compliance with the Concurrent Resolution, which directs that every officer of the departments of the State Government required by law to make a report to the General Assembly shall contain only concise statements of recommendations and of the transactions of the officer of the department; and that no copy of any report, or document, or law, or proposed measure shall be made and printed at the expense of the State except what shall be absolutely necessary for the information of the General Assembly.

EXECUTIVE COMMITTEE STATE BOARD OF HEALTH.

Robert Wilson, Jr., M. D., Chairman.....	Charleston
R. A. Marsh, M. D.....	Edgefield
C. C. Gambrell, M. D.....	Abbeville
E. A. Hines, M. D.....	Seneca
M. J. Walker, M. D.....	York
William Egleston, M. D.....	Hartsville
W. M. Lester, M. D.....	Columbia
S. C. Calder, Ph. G.....	Greenville
Samuel M. Wolfe, Attorney-General.....	Columbia
Walter E. Duncan, Comptroller General.....	Columbia
James A. Hayne, M. D.....	
Secretary and State Health Officer, Columbia	

STAFF OF SOUTH CAROLINA DEPARTMENT OF HEALTH.

James A. Hayne, M. D., Executive Officer of State Board of Health.

C. V. Akin, Assistant State Health Officer.

E. L. Filby, State Sanitary Engineer.

L. M. Fisher, Assistant Sanitary Engineer, U. S. P. H. S.

J. H. Woodward, Hotel Inspector.

E. W. Grieshaber, Bookkeeper.

W. M. Riser, Secretary to Dr. Hayne.

John Roundtree, Janitor.

PERSONNEL.

BUREAU OF RURAL SANITATION AND COUNTY HEALTH WORK.

L. A. Riser, M. D., in Charge.

F. L. Gary, Office Secretary.

County Health Officers—E. P. Knotts, M. D., John James Post, M. D., R. G. Hamilton, M. D., Walter Boone, M. D., Leon Banov, M. D., B. E. Kneece, M. D., E. O. Chimene, M. D.

County Nurses and Social Workers—C. Clements, A. Murphy, M. Gibson, A. Tanksley, T. Lightsey, T. Wilson.

County Inspectors—M. Smoak, G. G. Scruggs, J. B. Bailey, S. S. Welch, J. Wise.

County Stenographers—J. Johnstone, M. Mood.

LABORATORY DEPARTMENT.

F. A. Coward, M. D., in charge.

James R. Cain, Bacteriologist.

H. M. Smith, M. D., Assistant Bacteriologist.

M. C. Davis, Stenographer.

F. L. Parker, M. D., Chemist and Bacteriologist, Charleston.

BUREAU OF VITAL STATISTICS.

C. W. Miller, Chief Clerk.

H. Coles, Index Clerk.

M. Lindsay, Filing Clerk.

M. Currell, Stenographer.

SOUTH CAROLINA SANATORIUM.

Ernest Cooper, M. D., Superintendent.

J. C. Bonner, M. D., Assistant Physician.

Mrs. Estelle Cooper, Matron.

Carrie Spivey, R. N.

Pearl Leitzsey, R. N.

Pupil Nurses.

Servants.

DIVISION OF VENEREAL DISEASE CONTROL.

C. V. Akin, M. D., P. A. Surgeon, U. S. Public Health Service,
in charge.

F. O. Winter, Secretary-Clerk.

James H. Fowles, Attorney.

Anderson Clinic: T. P. Brown, M. D.; C. E. Brown, Nurse; T.
R. Brandon, Attendant.Charleston Clinic: E. C. Banard, M. D.; Supervising Con-
sultant; R. B. Gantt, J. J. Ravenel, Clinic Physicians; G. R.
Williams, Attendant: Clinic discontinued June 30, 1921.Columbia Clinic: N. B. Edgerton, M. D.; S. E. Wheeler, M. D.;
L. Blackburn, Nurse; L. Lester, Nurse; D. W. Talbert,
Attendant; P. Anderson, Hired Help.

Florence Clinic: J. D. Eaddy, M. D.; B. King, Nurse.

Greenville Clinic: B. L. Chipley, M. D.; J. E. Daniel, M. D.;
Odell Love, Nurse; T. A. Collins, Attendant.

Newberry Clinic: J. B. Setzler, M. D.; N. I. McCarley, Nurse.

Orangeburg Clinic: H. T. Schiffley, M. D.; H. S. Haynes,
Attendant.Spartanburg Clinic: C. L. Booth, M. D.; O. W. Wilson, M. D.;
M. I. Grant, Nurse.Union Clinic: P. K. Switzer, M. D.; F. P. Salley, M. D.; N. I.
Carberry, Nurse; R. Jeter, Attendant; S. White, Hired Help.

BUREAU OF CHILD HYGIENE.

Mrs. Ruth A. Dodd, R. N., in charge.
 Miss Malinda Murphy, District Supervisor.
 Miss Helen Fenton, District Supervisor.
 Miss Mary McMillan, Secretary to Mrs. Dodd (vice Miss Annie C. Aiken, resigned July 1, 1921).
 Ellen Woods Carter, Field Nurse.

THE BOARD'S QUARTERS.

The Executive Department of the State Board of Health and the Department of Venereal Disease Control, occupy rooms on the fifth floor of the Palmetto Building.

The Bureau of Child Hygiene occupies an office on the fourth floor of the Palmetto Building.

The Department of County Health Work is on the ninth floor of the Palmetto Building.

The Laboratory remains in well arranged rooms furnished by the University of South Carolina, in LeConte College.

The Bureau of Vital Statistics is at the University of South Carolina in LeConte College.

The South Carolina Sanatorium for the treatment of Tuberculosis at State Park, eight miles from Columbia.

MISCELLANEOUS.

A survey of the work done in 1921 by the State Board of Health indicates that we have increased the efficiency of each department, and we feel very proud of the records shown. Although our appropriation from the General Assembly was less than the year before, yet we accomplished much. We are still feeling the relaxation after the tense effort put forth by the State during the World's War and also are feeling the deflation in the price of those commodities which South Carolina has to offer for sale. However, there is not the same degree of panic in the State that existed in 1920. Crops were made at less cost than in the year 1920 and although they did not bring high prices, yet where they were produced the return from them was greater. The boll weevil practically destroyed two-thirds of the crop in the lower counties of the State, hence the great depression in

those counties, which contain the most fertile soil in the State. The reason these counties are not thickly populated is due primarily to the great extent to which malaria formerly existed in these counties. Statistics, however, seem to indicate that malaria is largely on the decrease, even in those counties where no anti-malaria work has been done, whereas in those counties where anti-malaria work has been done there is a most marked decrease.

The number of deaths from malaria in 1915 was 419, a rate of 26 per 100,000 population. In 1921 the deaths were 176, or a death rate of 12.5 per 100,000 population. In other words, malaria has been decreased over one-half in the past six years. These facts should be made as public as possible in order that those emigrants who settle in other States on account of the alleged serious menace in this State from malaria should know that malaria is being effectively combated.

The Bureau of Child Hygiene, which has been in operation for three years, shows a considerable increase of work done in 1921. The object of this Bureau is, primarily, to prevent infant mortality and to lessen the number of deaths during pregnancy, child birth and the puerperium. The record shows that there were in 1920 414 deaths from parturition and pregnancy, whereas in 1921 there were only 358, a decrease of practically 14%. There were also a less number of deaths from intestinal diseases, the total number of deaths of children under one year of age in 1921 was 1,418, against 1,594 in 1920, a gain of 176. Among the colored children there were 2,962 deaths in 1920 and 2,562 in 1921. These figures are for the first ten months.

The figures are still more striking if we take from under one year to ten years of age. In 1920 the number of deaths was 2,515 white children and in 1921 the number of deaths among white children was 2,198. In 1921 the number of deaths of colored children was 3,670 against 4,449 in 1920. The remarkable showing of these figures has largely been brought about by the fact that the Bureau of Child Hygiene has 42 nurses working in direct cooperation with its Bureau. They have worked in nearly every county in the State, but the staff paid directly by the State consists only of the Director, the District Supervisor and the Secretary. The rest are paid in whole or in part by cooperating agencies—by county appropriations in eleven counties, 16 nurses supported by the Red Cross, seven supported by cotton mills,

appropriations from the Metropolitan Life Insurance Company, tuberculosis committees, chambers of commerce and women's clubs.

A detailed report of the work of this department will be found in Mrs. Dodd's excellent report which is appended.

During the year there were 5,843 visits paid to infants under two years of age, and there were 473 midwives enrolled and instructed by these nurses. Mrs. Dodd's report should be carefully read by the General Assembly so that they may understand what excellent work is being carried on by this department.

Dr. C. V. Akin is still in charge of Venereal Disease Control work in this State and his report, which is appended, shows faithful work on the part of all those employed in this Bureau. The number of treatments for syphilis and the number of cases that have been cured during the three years that this Bureau has been under operation will surely reduce the number of those admitted to our State Insane Asylum and will also contribute perhaps more than any other factor in reducing the mortality rate in South Carolina. It is the tendency to regard Venereal Disease work as one of the war activities which can be dispensed with. This is not a fact, and South Carolina will bitterly regret should she curtail striking at the root of the majority of diseases which we have to combat. It is a known fact to the medical profession that the inclusion or exclusion of syphilis in the diagnosis of any disease is probably the most important single factor in determining both our diagnosis, prognosis and treatment of disease.

The report of the State Hygienic Laboratory, founded in 1908 and still doing an immense work with a very small personnel, is appended. Dr. F. A. Coward, who has been in charge of this laboratory since its inception, shows in this report that of the cases of typhoid fever which existed in South Carolina during the year 1921, over one-third showed positive tests from the laboratory. The Pasteur treatment is something that should give pause to our Legislature in its deliberations and make them see the necessity of protecting our people against the bite of rabid animals. Seven hundred sixty seven people were bitten by rabid animals during the year 1921, making, as Dr. Coward says, two persons bitten every day in the year in South Carolina.

This laboratory by legislative enactment does free Wassermanns. During the year 1921 there were 19,520 Wassermanns

done. The usual cost of a Wasserman is \$5.00 each, whereas the total appropriation for the laboratory is only \$11,000.00. If this work alone was done by the laboratory it would show a saving for the State of \$86,600.00. This in addition to the Pasteur treatment; during the year there were 767 treatments, 21 doses to the treatment, making a total of 16,107 doses. The usual cost of Pasteur treatment is \$25.00, therefore, \$19,175.00 would have been the cost of this treatment to the citizens of the State had there not been a laboratory. These figures should convince the most skeptical not only of the need of continuing the laboratory but of increasing its appropriation.

The most efficient piece of work that has been put on by the State Department of Health is the Vital Statistics Department. Mr. C. W. Miller, who is Chief Clerk and practically has entire charge of same, is the smallest paid registrar in the United States and this department is run on a more economical basis than any vital statistics department in the United States, the per capita cost being but three mills which is less than one-half of the cost per capita in North Carolina. There is no department in the State which has rendered more efficient service than has the Vital Statistics Department. As its reports are accepted by the Federal Government and published by the Bureau of the Census, the estimation of the health of South Carolina is made. By it we prove that South Carolina is not only not an unhealthy State, but ranks high among the States of the Union in its low death rate. The death rate for 1921 was only 11.9 per thousand and the birth rate was 29. The report of the Bureau of Vital Statistics is appended in this volume and furnishes extremely interesting data in regard to health conditions in South Carolina.

The work of the State Sanitary Engineer, Mr. E. L. Filby, continues to win the appreciation of the public. Mr. Filby's report, which is appended, is a model report and shows how much his services are needed in South Carolina. We have only had a Sanitary Engineer two years and yet the scope of his work has increased so much that it is almost impossible for him to attend to all the calls made upon him for advice in regard to water supplies and sewage disposal of schools, mills, cities and communities. Mr. Filby is a graduate of Cornell and holds the degree of C. E. from that institution, which holds front rank in the United States in the instruction given to its graduates in engineering.

The second year of the work of the State Board of Health in the inspection of hotels and restaurants as provided for under an Act passed in 1920 has proved the wisdom of the Legislature in the enactment of the bill for our Hotel Inspector, Mr. J. H. Woodward, has made 2,500 inspections during the year 1921, and has inspected 160 hotels and 460 restaurants. In addition to inspecting all hotels and restaurants twice a year, some oftener, Mr. Woodward has to attend to the complaints from the traveling public as they come to the office, and the greatly improved conditions of the hotels and restaurants of South Carolina is a matter of public comment. Four hotels were closed in this State during the year for non-compliance with the law.

The only criticism made of this work is that a flat fee of \$10.00 is charged for all restaurants, regardless of size and capital invested. We believe that a scale of licenses should be enacted. Under the present law we are obliged to charge \$10.00 for the inspection of each and every restaurant. The expenses of this work are borne by the hotels and restaurants, and sufficient funds are collected to pay all expenses and to turn some money into the State Treasury.

The Department of Rural Sanitation, or, as it should be designated, the Department of County Health Work, has in another place in this volume a most excellent report of the work done during the year 1921. This work is in the nature of a demonstration to a county of the value of a properly organized health department. There is no reason why the cities of the State should have by law health departments and the counties have no organization through which the health laws of the State may be carried out and no machinery for enforcing the prevention of the spread of communicable diseases.

This department has supervisory control over the following counties in South Carolina: Orangeburg, Darlington, Lee, Charleston, Fairfield, Newberry, Cherokee and Greenville. Each county is under an efficient health officer, who is a graduate physician and trained in public health work. The personnel of this department is excellent, and good work has been done during the past year. The following facts may bear comment. Among other things, 511 lectures were delivered with an attendance of 40,537; 32,562 were inoculated against smallpox; 12,903 people were inoculated against typhoid fever; 11,600 homes were visited; 619 schools had a medical inspection of the pupils made; 14,757

children were examined, of which number 7,198 were found to be defective. Through the influence of the health officers 846 children had their defects corrected.

There has been some criticism made that this work was not State-wide. This was unjust and every county can have a demonstration made by simply putting up \$3,600. For this \$3,600 the State and International Health Board will give an equal amount and a demonstration will be continued for two years. At the end of that time it is presumed that the county will assume the work, and the demonstration will be carried to some other county. Statistics submitted by Dr. Riser are very informative and should be carefully studied by the General Assembly.

The State Board of Health feels that the work of the State Board of Health and the preservation of the health of the citizens would be seriously injured should appropriations not be made for this most vital department. This department was very much handicapped this year by the appropriation of only \$10,000 by the General Assembly, but the International Health Board generously gave us \$18,000.00, and with this \$28,000.00 the work was carried on.

Under the Budget system the office over which the State Health Officer directly presides is called Superintendence and Accounts. In this office all the funds appropriated by the General Assembly are spent. No bill is paid unless okeyed by the head of this department in charge of the work. The State Health Officer signs every voucher or check which leaves this office. Last year the appropriation was \$198,000.00; the spending of this money means the making out and signing of many vouchers each month. The accurate accounting for this money is in the hands of a most capable bookkeeper, erroneously designated in the Budget as Clerk. Great praise is given each year by the Bank Examiners on the neatness and accuracy with which the books of the State Board of Health are kept. Miss E. W. Grieshaber has sole charge of these accounts, and her time is completely employed in these duties.

In addition to the bookkeeping by this department, it has charge of the distribution of typhoid bacterin, diphtheria antitoxin, vaccine virus, and all other **preventive serum** which is given out by the State Board of Health.

Dr. A. H. Hayden is the epidemiologist of the State Board of Health. His duties are those of "trouble-shooter." Whenever

epidemics occur or complaints are received, Dr. Hayden immediately responds, and through his wise counsel and specialized medical knowledge, is able to prevent the spread of epidemics and to inform cities, towns and individuals of their rights under the public health laws of South Carolina. A tabulated report as submitted by Dr. Hayden will show that every county and nearly every town in South Carolina have been visited by him in the past year. Through his efforts smallpox, which at one time threatened to be a very serious menace to South Carolina, was suppressed. Dr. Hayden is untiring in his efforts and unswerving in his desire to protect the public health. The State Board of Health is indeed fortunate in having secured the services of a man who has had such great opportunities for perfecting himself in the prevention and spread of communicable diseases.

We know of no office connected with the State Board of Health that is of more importance than that of epidemiologist. Without such office it would be impossible for the State Board of Health to do the duty placed upon it by the laws of the State of South Carolina.

Mr. E. L. Filby, State Sanitary Engineer, is also directly under the control of this department. We have already referred to his excellent report.

The Secretary to the State Health Officer has been put down in the Budget as stenographer, which is a misnomer. Upon the Secretary to the State Health Officer devolves the duty of answering the innumerable letters which come from both within and without the State in regard to health matters. It is necessary in this position that the secretary be a thoroughly educated person in order that the State may not be ashamed of the letters which are sent out from this department. The questions involved in this correspondence are of an extremely technical nature and unless a thoroughly trained and educated secretary is employed it will be impossible to properly maintain the office. It is the desire of the Board of Health to make this matter plain so that sufficient appropriation shall be made to secure competent service.

Under the laws of the State of South Carolina the State Board of Health adopts and promulgates rules and regulations for the carrying out of the Pure Food and Drug Act. The Department of Agriculture, in close cooperation with the State Board of

Health, sees that these regulations are carried out. The only regulation promulgated by the Board of Health this year under this head is that requiring all textile and industrial plants in the State to furnish their employees sanitary drinking fountains and sanitary drinking cups, which is as follows: "All textile and industrial plants are required to furnish their employees sanitary drinking fountains, or individual sanitary drinking cups, and to keep receptacles in which drinking water is kept properly covered so as to exclude dust, etc."

REPORT ON EPIDEMIC AND CONTAGIOUS DISEASES OCCURRING IN SOUTH CAROLINA DURING 1921.

BY JAMES A. HAYNE, M. D., Chairman of Committee.

SMALLPOX.

Smallpox was extremely prevalent all over the United States during the year 1921. In 1919, for twelve months there were only 51,314 cases in the United States, whereas in the first six months of 1921 there were 74,137 cases; and in Canada for twelve months in 1919 there were 4,273 cases, whereas for the first six months of 1921 there were 4,368 cases. South Carolina was no exception to this rule. Smallpox commenced to be prevalent in this State in the fall of 1920, and increased during December, and January and February 1921, and continued, which is unusual for smallpox, during the summer. The Board of Health vigorously combated the epidemic by the distribution of literature, by enforcement of compulsory vaccination of school children and by vaccination of contacts of smallpox cases. For the first time in several years there were eight deaths from smallpox, there having been only five deaths from smallpox in this State in the past seven years. In some parts of the United States smallpox is extremely virulent this year, with a high death rate. We must not in any way relax our efforts to combat this disease. There were approximately 1,500 cases reported to the State Board of Health during the year, but this in no way represents the number of cases.

By quarters the following amount of smallpox vaccine virus was distributed:

	1920	1921
First quarter	\$1,593 62	\$2,275 00
Second quarter	1,205 63	975 00
Third quarter	2,600 00	3,185 00
Fourth quarter	5,135 00	2,340 00
Total	\$10,534 25	\$8,775 00

The price was .061½ per point which, divided into the total amount expended, gives the following number of points distributed—135,000.

The State Board of Health will put on a film in 1922 entitled, "One Scar or Many," which it is hoped will be of extreme value in the education of the people as to the necessity of vaccination against smallpox

SCARLET FEVER.

Scarlet fever was prevalent in South Carolina during 1921, but less so than in 1920, there being but four deaths. It has been of a mild type and although there have been numerous cases, the death rate has been exceedingly small. The following rules should be carried out in the face of an epidemic:

1. Daily examination of exposed children and of possibly exposed persons for a week after last exposure.
2. Schools should not be closed where daily observation of the children by a doctor or nurse is available.
3. Education as to special danger of exposing young children to those exhibiting acute catarrhal symptoms of any kind.
4. Pasteurization of milk supply.

DIPHTHERIA.

Diphtheria is still on the increase as to the number of cases in the State and the death rate, although small per 100 cases, is still increasing. There were 117 deaths from diphtheria this year against 97 the year before, giving a death rate of 8.3 per 100,000 population.

The use of toxin antitoxin will prevent diphtheria and we believe it should be the policy of the legislature to afford this protection to the children of South Carolina, especially in schools where a case of diphtheria has developed. This toxin antitoxin

treatment is given in three doses, a week apart. It has no reaction such as is given by typhoid immunization and it effectually prevents diphtheria. The cost of the treatment is small and it is our desire to benefit as many children by this immunization as is possible. The number benefited will depend entirely upon the generosity of the legislature in its appropriation. Toxin antitoxin has been thoroughly tested out in New York City and has been found to be extreme value in preventing diphtheria. We append a table showing the number of cases diagnosed as diphtheria and receiving antitoxin.

DIPHTHERIA TABLE NO. 1.

TABLE SHOWING THE NUMBER OF CASES DIAGNOSED AS DIPHTHERIA AND RECEIVING ANTITOXIN.

1921.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Abbeville	5	3	7	3	.....	.....	.....	9	8	10	23	4	72
Aiken .....	.....	1	3	.....	.....	1	.....	3	8	8	11	2	37
Allendale .....	.....	.....	.....	.....	.....	1	.....	1	4	.....	.....	.....	8
Anderson	1	5	10	2	6	4	5	17	27	28	36	11	152
Bamberg .....	.....	.....	.....	.....	.....	3	1	.....	3	.....	.....	.....	3
Barnwell .....	.....	1	5	.....	1	.....	.....	3	2	10	5	9	36
Beaufort .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	4
Berkeley .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Calhoun .....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	3
Charleston	16	5	20	7	7	6	5	1	7	15	15	20	124
Cherokee .....	.....	.....	3	.....	.....	.....	.....	1	.....	10	1	.....	15
Chester .....	.....	.....	3	.....	.....	2	.....	6	22	43	7	5	88
Chesterfield .....	.....	.....	8	5	1	3	.....	8	23	19	3	19	89
Clarendon	1	.....	7	1	3	4	.....	1	.....	1	8	.....	26
Colleton	7	.....	.....	.....	8	.....	.....	.....	1	14	2	4	36
Darlington .....	.....	.....	6	.....	.....	.....	.....	17	6	11	3	.....	43
Dillon .....	.....	.....	17	.....	.....	.....	3	4	7	10	5	9	55
Dorchester .....	.....	2	1	4	3	5	.....	1	7	12	.....	.....	40
Edgefield .....	.....	5	5	.....	1	.....	.....	.....	6	.....	.....	.....	23
Fairfield .....	.....	9	1	.....	.....	10	.....	5	7	.....	.....	.....	38
Florence	11	9	9	3	3	.....	.....	14	15	42	13	.....	119
Georgetown .....	.....	1	.....	1	.....	.....	.....	.....	1	6	.....	.....	9
Greenville	19	.....	13	.....	.....	.....	5	23	31	54	45	19	209
Greenwood	9	.....	3	1	.....	.....	4	12	6	19	13	10	76
Hampton .....	.....	.....	.....	.....	.....	.....	.....	3	1	1	10	1	16
Horry .....	.....	.....	7	.....	2	1	.....	1	6	18	.....	.....	35
Jasper .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	5	.....	6
Kershaw .....	.....	.....	4	.....	.....	.....	1	13	10	15	5	3	51
Lancaster .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	5
Laurens .....	.....	.....	2	1	.....	.....	.....	.....	9	9	5	.....	26
Lee .....	.....	.....	.....	.....	1	.....	1	4	.....	3	.....	3	12
Lexington	5	14	5	.....	.....	.....	16	33	58	29	22	11	193
McCormick .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	6
Marion	15	7	1	.....	.....	.....	.....	4	23	19	7	5	81
Marlboro .....	.....	5	.....	.....	5	4	11	24	23	19	7	3	101
Newberry .....	.....	.....	10	.....	.....	1	9	7	25	29	26	8	115
Oconee .....	.....	.....	6	3	1	.....	2	1	28	10	15	7	73
Orangeburg	3	5	8	3	2	2	5	4	23	5	23	1	84
Pickens .....	.....	8	1	.....	.....	1	7	1	10	3	10	3	44
Richland	13	22	15	3	17	6	1	12	30	40	32	29	220
Saluda .....	.....	4	2	.....	.....	1	2	5	2	4	13	2	35
Spartanburg	16	6	27	5	6	2	18	14	75	44	48	12	263
Sumter	3	3	3	1	.....	6	5	5	9	13	.....	2	50
Union .....	.....	.....	3	1	1	.....	.....	6	1	10	21	1	44
Williamsburg .....	.....	.....	.....	.....	.....	.....	.....	.....	14	4	1	1	20
York	5	.....	14	.....	.....	2	8	12	45	47	12	36	181
Totals	129	122	229	43	69	64	110	275	584	642	467	258	2,982

The amount of diphtheria antitoxin consumed as compared with 1920 is as follows:

DIPHTHERIA TABLE NO. 2.

	1920					1921				
	1,000 Units.	3,000 Units.	5,000 Units.	10,000 Units.	20,000 Units.	1,000 Units.	5,000 Units.	10,000 Units.	20,000 Units.	
January	113	1	204	234	..	50	59	79	1	
February	31	3	47	73	..	72	91	162	17	
March	68	3	121	136	..	142	169	319	5	
April	25	2	39	73	..	24	30	58	2	
May	39	..	33	71	..	49	45	87	2	
June	153	4	267	237	..	68	102	130	..	
July	63	..	68	101	..	152	174	202	3	
August	190	..	227	262	..	183	158	376	2	
September	178	..	255	330	3	412	443	638	35	
October	306	..	433	735	7	428	461	769	56	
November	188	..	261	505	9	209	229	584	81	
December	131	..	170	274	6	113	175	289	46	
Total	1,485	13	2,485	5,346	25	1,902	2,126	3,693	250	

The expenditures for diphtheria antitoxin as compared with 1920 are as follows:

DIPHTHERIA TABLE NO. 3.

1920		1921	
Month.	Cost.	Month.	Cost
January	\$ 1,400 15	January	\$ 299 65
February	401 05	February	626 05
March	824 15	March	1,089 95
April	378 25	April	201 30
May	361 95	May	293 65
June	1,579 65	June	487 10
July	366 20	July	687 30
August	1,031 55	August	1,277 50
September	1,223 35	September	2,623 00
October	2,545 75	October	3,080 00
November	1,721 75	November	2,272 50
December	1,345 80	December	1,646 50
Total	\$ 13,199 60	Total	\$ 14,585 50

The contract for 1921 was given to E. R. Squibb & Sons of New York, and they have furnished us reliable diphtheria antitoxin and vaccine virus. The number of takes from the vaccine virus supplied is greater than any of the vaccine that has been supplied by other companies in the past, and this is a matter of great importance, as the cost of vaccination depends largely upon the number of takes per 100. This is due to the potency of their product which is due to the fact that all vaccine is shipped in special ice containers so that the vaccine is kept cool in transit. The glycerinized vaccine virus which is required to be used by the United States Public Health Service only requires an elevation of temperature of 100° F. for a period of about six hours to completely destroy the potency of vaccine, hence the absolute necessity of keeping vaccine virus at a low temperature.

DIPHThERIA ANTITOXIN DISTRIBUTORS.

ABBEVILLE COUNTY.

Abbeville	McMurray Drug Co.
Donalds	Johnson Drug Co.
Due West	Todd Drug Co.

AIKEN COUNTY.

Aiken	Hall's Pharmacy, W. J. Platt & Co.
Graniteville	E. E. Platt, W. C. R. Turnbull
Lake View	Smith's Drug Store
Langley	Langley Drug Co.
North Augusta	W. E. Mealing, M. D.
Salley	Jones Pharmacy
Wagener	Abel & Jordan

ANDERSON COUNTY.

Anderson	Bigby's Pharmacy, Peoples Pharmacy, Evans Pharmacy
Belton	Horton's Pharmacy
Honea Path	Bolt Drug Co.
Iva	Iva Drug Co.
Pelzer	W. W. Griffin
Pendleton	E. G. Evans & Sons
Townville	J. M. Hobson, M. D.
Williamston	Guyton Drug Co.

BAMBERG COUNTY.

Bamberg	Mack's Drug Store
Denmark	Peoples Pharmacy
Ehrhardt	Fender-Kinard Drug Co.
Olar	R. & H. Drug Store

BARNWELL COUNTY.

Allendale	P. Searson Drug Co.
Barnwell	Best Pharmacy, Mace Drug Co.
Blackville	Epps Pharmacy
Fairfax	Fairfax Drug Store
Williston	J. M. Smith & Son

BEAUFORT COUNTY.

Beaufort	C. G. Luther
Port Royal	M. B. Cope

BERKELEY COUNTY.

Moncks Corner	Moncks Corner Drug Store
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CALHOUN COUNTY.

St. Matthews	Fair's Pharmacy
Fort Motte	J. A. Woodley, M. D.

CHARLESTON COUNTY.

Charleston	Roper Hospital, G. W. Aimar & Co., D. P. Frierson, M. L. Spesseger, Jno. A. McFall, C. F. Schewettmann & Son, L. G. Mtila, Paragon Drug Co.
Mt. Pleasant	Mt. Pleasant Pharmacy

CHEROKEE COUNTY.

Blacksburg	Iron City Pharmacy
Gaffney	Gaffney Drug Co.

CHESTER COUNTY.

Chester	Standard Pharmacy, Chester Drug Co.
Great Falls	Public Pharmacy

CHESTERFIELD COUNTY.

Cheraw	T. E. Wannamaker & Son
Chesterfield	D. H. Laney
Jefferson	P. T. Gantt Drug Store
McBee	McBee Drug Co.
Pageland	Kennington's Pharmacy
Ruby	Kennington's Pharmacy

CLARENDON COUNTY.

Manning	Dickson's Drug Store
Paxville	Thomas W. Gunter
Summerton	Summerton Drug Co.
Turbeville	C. E. Gamble
New Zion	E. B. Gamble, M. D.

COLLETON COUNTY.

Walterboro	John M. Kline, Walterboro Drug Co.
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DARLINGTON COUNTY.

Lamar	Palmetto Drug Co.
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DILLON COUNTY.

Dillon	Evans Pharmacy, Moody Drug Co.
Latta	Peoples Drug Co.
Darlington	Hill's Drug Store, McFall's Drug Store
Hartsville	Boyd-Powe Drug Co., Robert Stewart Jr.
Page's Mill	Smith's Pharmacy

DORCHESTER COUNTY.

St. George	P. M. Judy
Summerville	Tupper Pharmacy Co.

EDGEFIELD COUNTY.

Edgefield	Mitchell & Cantelou, J. D. Holstein
Johnston	Peoples Drug Co.

FAIRFIELD COUNTY.

Ridgeway	B. G. Team, M. D., Ridgeway Pharmacy
Winnsboro	J. H. McMaster & Co.
Blythewood	M. Langford

FLORENCE COUNTY.

Florence	F. U. Lake Drug Co.
Lake City	Lake City Drug Co.
Scranton	W. S. Lynch
Timmionsville	Marvin Drug Co., Cole Drug Co.

GEORGETOWN COUNTY.

Georgetown	Iseman Drug Co.
Andrews	Hogan's Drug Store

GREENVILLE COUNTY.

Fountain Inn	Redick's Pharmacy
Greenville	Armstrong Pharmacy, Carpenter Bros., L. H. Stringer, Doster Bros. & Bruce, Reynolds & Earle.
Greer	Corner Drug Co.
Piedmont	Suber Drug Co.
Simpsonville	Simpsonville Drug Co.

GREENWOOD COUNTY.

Greenwood	Harris Drug Co., Greenwood Drug Co.
Ninety-Six	Holmes Pharmacy
Ware Shoals	Ware Shoals Mfg. Co. (Drug Dept.)
Troy	Troy Drug Store

HAMPTON COUNTY.

Estill Estill Pharmacy
 Hampton Charles A. Rush

HORRY COUNTY.

Conway Horry Drug Co., Conway Drug Co.
 Aynor Aynor Drug Store

JASPER COUNTY.

Ridgeland A. Rithers, Jr.

KERSHAW COUNTY.

Bethune Bethune Drug Co.
 Camden W. R. Zemp

LANCASTER COUNTY.

Heath Springs W. T. Stover & Sons
 Kershaw Hays and Gregory
 Lancaster Standard Drug Co.

LAURENS COUNTY.

Clinton Kellers Drug Store
 Gray Court Gray Court Drug Store
 Laurens Laurens Drug Co., Powe Drug Store, Putnam's Drug Store
 Cross Hill Cross Hill Pharmacy, J. H. Miller, M. D.

LEE COUNTY.

Bishopville Parker Drug Co.

LEXINGTON COUNTY.

Batesburg Ridgell Drug Co.
 Chapin J. W. Eargle
 Leesville Citizens' Drug Co.
 Lexington Palace Drug Co., Harmon Drug Co.
 Pellon D. R. Kneece
 Swansea Livingston Pharmacy, Swansea Drug Co.
 New Brookland Whetsell's Drug Store

MCCORMICK COUNTY.

McCormick McCormick Drug Co.

MARION COUNTY.

Marion J. S. Davis
 Mullins Palace Drug Co., Kirby's Pharmacy
 Nichols Nichols Pharmacy

MARLBORO COUNTY.

Bennettsville Douglass & Breeden
 Blenheim Napier's Drug Store
 Clio Blackman & McInnis Drug Co.
 McColl Moore Drug Co.

NEWBERRY COUNTY.

Little Mountain J. M. Sease
 Newberry Newberry Drug Co., Gilder & Weeks, Mayes Drug Store
 Prosperity Prosperity Drug Co.
 Whitmire Whitmire Drug Co.

OCONEE COUNTY.

Clemson College L. C. Martin
 Fair Play W. C. Mayes
 Seneca Seneca Pharmacy
 Walhalla Bell's Drug Store
 Westminster Frierson's Drug Store, Stonecypher Drug Co.

ORANGEBURG COUNTY.

Branchville	Pipkin Pharmacy
Elloree	P. L. Felder
Eutawville	E. O. Horger
North	Peoples Drug Store
Oranburg	Lowman Drug Co., Wannamaker Drug Co.
Springfield	Farmers Drug Store, Springfield Drug Co.
Neeses	Williams Drug Store

PICKENS COUNTY.

Central	Central Drug Co.
Easley	Palmetto Pharmacy
Liberty	Hunter's Pharmacy
Pickens	Pickens Drug Co.

RICHLAND COUNTY.

Columbia	Blanding Street Drug Store, McGregor's Drug Store Taylor Drug Co., Wingfield Pharmacy.
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SALUDA COUNTY.

Ridge Spring	Ridge Drug Co.
Saluda	Saluda Drug Co.

SPARTANBURG COUNTY.

Campobello	Campbello Drug Co.
Converse	Peoples Drug Co.
Cowpens	Cowpens Drug Co.
Inman	Inman Drug Co.
Landrum	Landrum Drug Co.
Pacolet	Pacolet Mfg. Co.
Spartanburg	Kennedy's Drug Store, Arthur Irwin, Ligon's Drug Store K-W-N Pharmacy, Todd Drug Co.
Woodruff	R. T. Beason, O. E. Westmoreland
Greer	Greer Drug Co.

SUMTER COUNTY.

Mayesville	The Peoples Pharmacy
Sumter	City Drug Co., Kesron's Pharmacy, Sibert's Drug Store, De Lome Pharmacy

UNION COUNTY.

Jonesville	Jonesville Drug Store
Union	People's Drug Store, Glymph's Pharmacy
Carlisle	Carlisle Drug Co.

WILLIAMSBURG COUNTY.

Greeleyville	Service Drug Co.
Johnsonville	Cockfield Drug Co.
Kingstree	Kingstree Drug Co.

YORK COUNTY.

Clover	Clover Drug Co.
Fort Mill	Lytles Drug Co.
Rock Hill	Rock Hill Drug Co.
Sharon	Sims Drug Co.
York	York Drug Co.
Hickory Grove	Hood Drug Co.

TYPHOID FEVER.

Typhoid fever has increased slightly in South Carolina during 1921 and we feel deeply this increase. We had hoped that we

had so educated the people to the fact that typhoid fever was a disgrace to a civilized community and had so impressed upon them the fact that typhoid fever could not be contracted save by the swallowing of the excreta of individuals suffering from this disease that there could be a decided decrease in this disease during the year. We feel that the lesson which we taught in hook-worm disease, that the proper disposal of human excreta is necessary for the health of a community, has been forgotten. We fear that South Carolina is suffering a relapse into the barbarous conditions that existed when proper sanitary disposal of human excreta was almost an unknown condition in the rural districts. North Carolina has reduced its death rate to 10 per 100,000 population, whereas South Carolina has 22 per 100,000 population—more than doubling North Carolina. It is a matter of mortification to the Board of Health that this should be, for it has been justly said that the amount of typhoid fever in a community is an index to the civilization of that community.

Upon the occurrence of an epidemic in a community, we send out the following rules for preventing typhoid fever:

For the Individual:

1. Keep away from all known or suspected cases of typhoid.
2. Wash hands thoroughly before meals. Do not use "roller towels."
3. Use drinking water only from sources known to be pure, or, if this is not possible, use water that has been purified by municipal filtration or by hypochlorite treatment or by boiling in the household.
4. Avoid bathing in polluted water.
5. Use pasteurized or boiled, instead of raw milk.
6. Select and clean vegetables or berries, that are to be eaten raw, with great care.
7. Avoid eating "fat" raw oysters, and in general, oysters and other shell fish whose origin is not known.
8. Be vaccinated against typhoid in all cases in which any special exposure is known or feared.

For the Community:

1. Insist on the hearty cooperation of all persons with an efficient health officer.
2. Require notification and a reasonable degree of isolation of every known suspected typhoid case.
3. Exercise strict control over the disinfection of known typhoid excreta.
4. Insist on pure or purified water supplies.
5. Require pasteurization of milk supplies.
6. Regard all human excreta as possibly dangerous, and control their disposition in such a way to prevent contamination of food and drink.

DEATHS FROM TYPHOID FEVER IN THE FOLLOWING COUNTIES FOR TEN
MONTHS ENDING OCTOBER 31, 1920 & 1921.

	1920	1921
Abbeville	4	6
Aiken	1	11
Allendale	5	1
Anderson	7	10
Bamberg	5	6
Barnwell	3	6
Beaufort .....	..	..
Berkeley	4	2
Calhoun	4	7
Charleston	17	21
Cherokee	4	6
Chester	9	9
Chesterfield	4	5
Clarendon	7	6
Colleton	3	2
Darlington	2	14
Dillon	3	10
Dorchester	6	3
Edgefield	5	5
Fairfield	2	1
Florence	13	15
Georgetown	5	2
Greenville	7	8
Greenwood	5	12
Hampton	3	7
Horry	6	4
Jasper	1	..
Kershaw	7	7
Lancaster	2	4
Laurens	8	14
Lee	4	4
Lexington	6	4
Marlon	2	4
Marlboro	16	2

McCormick	2	1
Newberry	3	7
Oconee	7	3
Orangeburg	15	15
Pickens	3	11
Richland	13	14
Saluda	2	3
Spartanburg	14	6
Sumter	12	14
Union .....	..	3
Williamsburg	6	10
York	5	5
Total	262	310

For 1921.

Whites	85	
Negroes	225	
White Rate per 100,000		12.5
Black Rate per 100,000		31.2

TUBERCULOSIS.

The fight against this disease is being waged most successfully and our death rate shows a gradual decrease. There were 1172 deaths in the first ten months of 1921 as opposed to 1242 deaths in 1920 for the same period of time. The Sanatorium at State Park is always full and we have a long waiting list. We call especial attention to the report of Dr. Ernest Cooper, Superintendent of this Sanatorium, and we wish to emphasize the fact that South Carolina needs more beds for her tubercular citizens. There are in South Carolina 30 deaths for every bed provided, whereas Mississippi, a State which resembles South Carolina both as to number of population and the relative number of negro and white people, has only four deaths per bed. Recently Mississippi has appropriated one million dollars for a State sanatorium, whereas the total expenditure of South Carolina for this purpose is only \$100,000 for buildings.

DEATHS FROM TUBERCULOSIS, ALL FORMS, IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING OCTOBER 31, 1920—1921.

	1920	1921
Abbeville	21	12
Aiken	32	22
Allendale	25	7
Anderson	39	48
Bamberg	10	10
Barnwell	16	12
Beaufort	6	23
Berkeley	10	6
Calhoun	18	12

Charleston	114	122
Cherokee	15	26
Chester	17	17
Chesterfield	14	16
Clarendon	10	11
Colleton	5	3
Darlington	51	28
Dillon	14	15
Dorchester	18	11
Edgefield	14	8
Fairfield	13	14
Florence	54	50
Georgetown	13	16
Greenville	167	141
Greenwood	23	23
Hampton	17	8
Horry	11	8
Jasper	4	5
Kershaw	17	20
Lancaster	27	24
Laurens	32	37
Lee	18	11
Lexington	16	16
Marion	8	24
Marlboro	33	27
McCormick	9	4
Newberry	25	27
Oconee	19	14
Orangeburg	38	34
Pickens	14	9
Richland	102	127
Saluda	4	6
Spartanburg	89	65
Sumter	40	50
Union	19	21
Williamsburg	33	22
York	43	58
Total	1337	1270

For 1921.

Whites	326
Negroes	944
	1270

White Rate Per 100,000	47.8
Negro Rate Per 100,000	131.0

MEASLES.

There has been a slight increase in deaths from measles in South Carolina during 1921, although there has been no serious epidemic.

We again print the methods which are found best for the control of this disease.

(A) *The Infected Individual and His Environments:*

1. Recognition of the disease—clinical symptoms. Special attention to the rise of temperature. Koplik spots and catarrhal symptoms in exposed individuals.

2. Isolation—during period of communicability.

3. Immunization—none.

4. Quarantine—exclusion of exposed susceptible school children and teachers from school 14 days from last exposure. This applied to exposure in the household. Exclusion of exposed susceptible children from all public gatherings from the same period.

5. Concurrent disinfection—thorough cleansing.

(B) *General Measures:*

1. Daily examination of exposed children and of other possibly exposed persons. This examination should include record of the body temperature. A non-immune exposed individual exhibiting a rise of temperature of 100 degrees F. or more should be promptly isolated pending diagnosis.

2. Schools should not be closed or classes discontinued where daily observation of the children by a doctor or nurse is available.

3. Education as to special danger of exposing young children to those exhibiting acute catarrhal symptoms of any kind.

WHOOPING COUGH.

This extremely fatal disease of childhood is showing a satisfactory decrease in this State. However, there were 82 deaths during the past year as compared with 182 the previous year. We believe that the best plan to prevent the same is by requiring the child to wear a band on its arm with "Whooping cough" printed thereon so that persons with babies under two years of age will not come in contact with them. Quarantine has not proven to be effectual in stopping this disease.

CEREBRO-SPINAL MENINGITIS.

There were 29 deaths from this disease in South Carolina during the past year as compared with 30 the year before. We believe that the furnishing by the State of antimeningococcic serum has saved many lives in South Carolina.

MALARIA.

The boll weevil has practically revolutionized our ideas of what should be the farm products of the lower counties of South Carolina. Counties that made 100,000 bales of cotton are reduced to 10,000 bales, and some method of farming must be devised by which the extremely fertile soil of the lower counties can be utilized. The lower tier of counties were the first to be settled in South Carolina, but owing to the abandoning of the large rice fields, the white population moved away to a large extent and it became settled largely by negroes. The low-country negro is usually incapable of the highly specialized knowledge necessary for truck farming and it is essential that we render this part of the State suitable for cultivation by thrifty white emigrants. To do this we must combat malaria, for the white man will not live where malaria is prevalent. An effort is being made to demonstrate that the control of malaria is economical and practical, and the report of Capt. L. M. Fisher, Sanitary Engineer, U. S. Public Health Service, who is loaned to us by that department, illustrates what can be done in the prevention of malaria.

We again submit the report of the Subcommittee on Medical Research of the National Malaria Committee of the United States Public Health Service as follows:

Report of the Subcommittee on Medical Research of the National Malaria Committee of the United States Public Health Service is as follows:

"The Subcommittee on Medical Research of the National Malaria Committee presents the following as a standard method of treatment of malaria for the purpose of curing the patient of his infection, and recommends its general use by the medical profession. We believe that this treatment will, in the great majority of cases, prevent relapses in the patients themselves and also prevent transmission of infection to others.

"Our opinion is based largely upon the results of the treatment by this method, under average conditions, in their homes, of a large number of persons infected with malaria.

"For the acute attack, 10 grains of quinine sulphate by mouth three times a day for a period of at least three or four days, to be followed by ten grains every night before retiring for a period of eight weeks. For infected persons not having acute symptoms at the time, only eight weeks' treatment is required.

"The proportionate doses for children are: Under one year, 1-2 grain; one year, 1 grain; two years, 2 grains; three and four years, 3 grains; five, six and seven years, 4 grains; eight, nine and ten years, 6 grains; eleven, twelve, thirteen and fourteen years, 8 grains; fifteen years or older, 10 grains.

"It is not claimed that this is a perfect and even the best treatment in all cases, but it is our belief that it is a good and satisfactory method for practical use to prevent relapse and transmission to other people."

If the method outlined above is carried out it is believed that we can successfully combat malaria.

ANNUAL REPORT

DIVISION OF MALARIA CONTROL SOUTH CAROLINA STATE BOARD OF HEALTH. 1921.

The work of this division during the year was largely directing maintenance work at towns where malaria control operations were instituted in previous years, in interesting new towns in Malaria Control Work and in doing permanent control work at those towns under cooperative arrangements with the United States Public Health Service and the International Health Board.

In addition to the work above outlined, a number of investigations were made with reference to malaria prevalence at several towns in the State as shown below.

The general plan of procedure in carrying out malaria control operations has been to emphasize the prevention of the breeding of malaria carrying mosquitoes. The giving of quinine was

encouraged, but no systematic methods were made to administer quinine in a wholesale way in any community. The effectiveness of permanent control of malaria mosquito breeding places has been so thoroughly demonstrated by our work in this State, as well as by similar measures elsewhere, that wherever it is reasonably possible to do so, it is deemed advisable to concentrate efforts on prevention of mosquito breeding, rather than on quinine sterilization which needs to be renewed from year to year, and proves in the aggregate to be nearly as expensive as permanent control measures, particularly in heavily infected towns.

The employment of other methods for the control of malaria, such as the screening of houses and the swatting of *Anopheles* in bed rooms were also encouraged.

SYSTEMATIC CONTROL WORK.

Systematic control work of a permanent nature was done at the following towns under the cooperative agreement with the United States Public Health Service and the International Health Board.

Town	Year work was started	Approx. Reduction in Mal. Incidence	Character of Work
Bamberg	1919	90%	Maintenance
Chester	1920	99%	Maintenance
Hartsville	1920	50%	Maintenance
Fairfax	1921	80%	New Work
Beaufort	1921	40%	New Work
Holly Hill	1921	*	New Work
St. George	1921	*	New Work
Hampton	1921	*	New Work

The results of the work at Bamberg, which was where systematic control measures in this State were first attempted, have been so marked as to be almost spectacular. Neighboring towns, such as Fairfax, Hampton, St. George, Erhardt etc., have observed the results of the work and have made every effort to carry out similar measures in their own communities. The work at Hartsville and Beaufort was undertaken to supplement incomplete work that had been previously done in those places. This ac-

*Work started too late in the season to be effective this year.

counts for the comparatively low reduction rate at these towns compared with towns where no work had previously been done at all.

Work at Hampton, St. George and Holly Hill was undertaken too late in 1921 to effect the malaria incidence at these towns during this year; work having been started at Holly Hill September 15th; St. George, October 3rd; and at Hampton, October, 10th. A good showing is anticipated at these places in 1922, provided the towns will properly maintain the work. By doing the work at these places in the fall of the year when there is less water to contend with than in early summer, the first cost of ditching was only a fraction of what it would have been under other conditions; thus effecting a considerable saving to the towns. The results accomplished at the first five places above mentioned, are tabulated below.

Bamberg, Population 2,211.

Year	Total No. Cases	Economic Loss	Loss per Inhabitant	Percent of Population Infected
1918	736	\$23,188	\$ 7.70	24.5
1919	1,087	35,871	11.95	39.6
1920	150	4,800	2.17	7.0
1921	20	1,000	.45	1.0

Chester, Population 5,557.

	Total No. Cases	Economic Loss	Loss per Inhabitant	Percent of Population Infected
1918	302	\$10,986	\$1.98	5.5
1919	411	21,154	3.84	7.5
1920	55	2,750	.49	1.0
1921	2	100	.018	0.035

Hartsville, Population 3,624.

	Total No. Cases	Economic Loss	Loss per Inhabitant	Percent of Population Infected
1918	11	\$396.00	\$0.10	0.3

1919	10	510.00	.14	0.3
1920	4	200.00	.055	0.3
1921	4	200.00	.055	0.1

Fairfax, Population 957

	Total No. Cases	Economic Loss	Loss per Inhabitant	Percent of Population Infected
1920	287	\$14,500	\$15.10	30
1921	35	1,500	.15	4

There has been a consistent improvement in the malaria situation at Beaufort, due in large measure to the efforts made during the war, at which time the Federal authorities cooperated with the local health authorities in malaria control work.

Beaufort, Population 2,831.

	Total No. Cases	Percent of Population Infected
1915	198	7
1916	118 (Some control work started by town)	4.2
1917	112	4
1918	52	2.2
1919	No figures available	
1920	No figures available	
1921	21	0.75

The following work was done at the places indicated:

NEW DITCHES DUG.—HAND LABOR.—(MILES).

Fairfax	6.6
Holly Hill	4.65
St. George	3.1
Hampton	2.6
Beaufort .....	..
Bamberg .....	..
Total	16.95

NEW DITCHES DUG.—DYNAMITE.—(MILES).

Fairfax	1.9
Holly Hill	0.0
St. George	0.0
Hampton	0.5
Beaufort .....	..
Bamberg .....	..
Total	2.40

OLD DITCHES CLEANED, BRUSHED AND DEEPENED.—(MILES).

Fairfax	25.50
Holly Hill .....	..
St. George .....	..
Hampton	1.75
Beaufort .....	..
Bamberg	49.5
Total	76.75

TOTAL OLD AND NEW DITCHES.

Fairfax	34.0
Holly Hill	4.65
St. George	3.10
Hampton	4.85
Beaufort .....	..
Bamberg	49.5
Total (Miles)	96.1

DITCHES OILED.

Fairfax	260
Holly Hill .....	..
St. George .....	..
Hampton .....	..
Beaufort	*6
Bamberg	49.5
Total	36.2

OIL USED.

Fairfax	865
Beaufort	15
Bamberg	1,358

Ninety-two miles of brushing was done to facilitate oiling, eighteen bridges were built, twenty-two culverts were installed under railroads, one hundred and fifty feet of storm drains were laid, two manholes were constructed, and ponds and streams were stocked with top minnows.

*Pond edges cleared.

The work at Hartsville and at Chester was turned over almost exclusively to the local board of health; only very generally supervision and direction was exercised. There is a full time health officer at each of these places. The health officer at Chester, Captain F. M. Boldridge, formerly in the Sanitary Corps, U. S. A., was formerly inspector for the malaria control work at Chester. Success of the malaria control work was so gratifying to the citizens that it made it possible to reorganize the health work and make the inspector health officer. He exercises supervision over food establishments, abattoir's, garbage and refuse collection, sterilization of the city's water supply. Hundred surface privies were eliminated and many properties con-

nected to the sewer as a result of his work. The fly problem was attacked and very excellent results accomplished. Milk cattle were tuberculin tested and standards established for dairies. The school children were a hundred per cent vaccinated, etc. In the words of the mayor, more was accomplished in two years than would have been accomplished in a life time under the old methods.

OTHER ACTIVITIES.

A number of investigations were made with reference to the effect that mill ponds had upon the prevalence of malaria in several sections of the State. As a result of efforts of this division, in cooperation with the citizens of Olanta, a mill pond whose back waters extended into the town limits and which was said to be over a hundred years old, was drained; thus removing a prolific breeding place and making possible the better drainage of land adjacent to the town. A considerable portion of the total amount of drainage work necessary here to control malaria was carried out by the citizens of Olanta at their own expense, which amounted to upwards of a thousand dollars.

During the year, a large lumber interest requested assistance in selecting a locality in a malarial section of the State where they could locate a manufacturing enterprise where white labor could live without contracting malaria. Because of the small number of people residing in the vicinity of the proposed sites it was not possible for the communities themselves to institute permanent control measures. Surveys were made of the sites and recommendations submitted to the lumber company in regard to the work necessary to be performed in order to control malaria.

An investigation was made of a project in Darlington County involving the construction of a small mill pond at a site where a pond formerly existed, but which was surreptitiously destroyed several years ago by citizens of the community who attributed the presence of malaria largely to the pond. The promoter of the project was advised not to attempt to construct a pond because of the possible ill effects it would have on the prevalence of malaria.

The effect that several artificial ponds in Allendale County had upon the prevalence of malaria in the community were also

investigated by a representative of this division. The draining of these ponds was not recommended to be done until at sometime in the future, after larger and more important breeding areas in the community were first controlled. The control of these larger areas seems to be at present beyond the economic resources of the community.

Advice was also given to individual land owners requested information and assistance in solving their own malaria problems.

At the request of the County Health Officer for Fairfield County, an investigation was made of the prevalence of malaria in certain sections of the country. It is contemplated to present these findings in a later report.

The towns of Greer and Woodruff, in Spartanburg County, requested assistance in dealing with their mosquito problems. These requests came late in the season, and it was possible to accomplish comparatively little during the year to relieve the communities. In pools of sewage at the city's filtration beds at Greer, and in streams in the vicinity of Woodruff, very prolific breeding was found. These towns have shown an interest in mosquito control work and have requested the cooperation of this division in dealing with their problems during the coming year.

The educational work of the division consisted; of delivering lectures to senior medical students at the Charleston Medical College, to the Columbia Chapter of Professional Engineers, at which moving picture illustrations of malaria control work were shown, a paper was prepared and read before the Columbia Medical Society; lectures were given to a group of colored home demonstration agents at Orangeburg; pamphlets and posters were distributed; a malaria exhibit was prepared and shown at the State Fair and at the Convention of the Southern Medical Association at Hot Springs, Ark., where malaria workers from the Southern States met with the National Malaria Committee; a pamphlet by the director of the division on, "What can a Community Afford to Pay to Rid Itself of Malaria," was printed and distributed. By cooperating with the Bureau of Rural Sanitation, a film on "Malaria Control Work," belonging to the division was shown to approximately sixty thousand people in small audiences throughout the rural districts where malaria control work is so sorely needed, and where it is at times so difficult to perform.

An effort was made to make a scientific measure of the amount

of malaria in the community before control work was undertaken at the towns of Holly Hill, St. George, and Hampton. Owing to the limited funds available and to the small amount of time that could be given to this work, which was carried out by the State Epidemiologist, Dr. A. H. Hayden, assisted by local physicians or nurses, not sufficient work was done to form a really trustworthy basis for an estimate. It is hoped that more can be done along this line next year and in future years so that the claims made regarding the effectiveness of control methods will be still further substantiated. This work consisted in making examination of school children for enlarged spleens and in examining blood specimens from a number of them. As was to be expected in a community where quinine is taken, even in small doses, not many enlarged spleens were discovered. The findings are shown in the following table:

Number of white children examined—8 years and over—both sexes, St. George 134; Holly Hill, 67; Hampton 77.

Number of spleens capable of being palpated, St. George 6; Holly Hill, 1; Hampton, 6.

Number of blood specimens found, St. George 35; Holly Hill 26; Hampton, 26.

Number of blood specimens positive, St. George, 5; Holly Hill, 2; Hampton, 3.

Because of the increased personnel attached to this division it was no longer possible to carry on the office work at 512 Palmetto building, and office room was obtained in February, at 1246 Main Street. The personnel attached to this division consists of the following:

Officer in Charge, L. M. Fisher.

Malaria Field Agent, R. S. Baynard.

Sanitary Inspector, William Weston.

Sanitary Inspector, Lindsley Arthur.

Stenographer, Mary Dorn.

An effort was made to collect statistics with reference to the prevalence of malaria throughout the State. This disclosed that during the five year period (1916-1921), there was only one county in the State in which there were no deaths from malaria reported by physicians.

Physicians were circularized and requested to report the number of cases of malaria in their practice during the current year.

Similar figures were collected in 1920. This information is tabulated and analyzed in a supplemental report.

The Secretary of the Board of Health at Bamberg, where Malaria Control Work was first started, in speaking about the results accomplished, says:

"Before this work was undertaken, malaria was Bamberg's black eye. It was the dread of our people. I have just inquired of representative citizens who are in position to know. While none of these have kept records, the general opinion is we have not had more than ten per cent of the malaria (if that much) we had two years ago, previous to malaria control work. My personal opinion is we have had less than ten per cent. *** I thank God for the institutions bringing about this Malaria Control Work."

The Secretary of the Board of Health of Chester says:

"The work with reference to Malaria Control within the City of Chester has been of the greatest value to the citizens. The value of the work is inestimable, and its true value can properly be appreciated only by those who lived under the old conditions—the time before the work was begun—and who now live under the new conditions."

Other town officials are equally warm in their estimate of the results accomplished.

CONCLUSION.

Malaria fever, in the words of Sir Ronald Ross, is perhaps the most important of human diseases. While it is seldom directly fatal, it causes in the aggregate an enormous amount of sickness and mortality. Unlike other epidemic diseases, it is not transient, but remains forever in areas it has once invaded. It abounds most in the most fertile sections and at seasons best suited to agriculture. Very malarious places cannot be prosperous; the rich shun them; those who remain are too sickly to do hard work. Sooner or later such localities end by being abandoned by all but a few miserable inhabitants. For the state, as for the individual, health is the first postulate of prosperity. The first object of scientific government should be the promotion of prosperity.

The scientific control of malaria has been made possible by the combined research efforts of hundreds of scientists scattered all

over the world. That it is possible to employ these methods to the very great economic advantage of the state has been clearly demonstrated by malaria control work carried out at a number of places in our State. The duty of those responsible for the administrative policies of the State and of our legislators who make the carrying out of those policies either possible or impossible could hardly be clearer on any subject than they are on the subject of malaria control.

Respectfully submitted,

L. M. FISHER,

Associate Sanitary Engineer,

In Charge of Malaria Control Work in S. C.

REPORT OF WORK DONE BY DR. A. H. HAYDEN,
EPIDEMIOLOGIST, STATE BOARD OF HEALTH,
FROM JANUARY 1, TO DECEMBER 31, 1921, INCLUSIVE.

- January* 1.—Investigation of smallpox in Florence, S. C.
- January* 2-3.—Investigation of smallpox in McBee, S. C.
- January* 4.—Investigation of smallpox in Lexington, S. C.
- January* 5.—Columbia, S. C., business with office.
- January* 6.—Visited Kershaw, S. C., and vicinity to investigate outbreak of smallpox.
- January* 7.—Investigating smallpox, etc. in Columbie and vicinity.
- January* 8-9.—At Pontiac, S. C., and vicinity, investigating smallpox.
- January* 10.—In Columbia, investigating smallpox on Wiley Jones and other farms.
- January* 11-12.—Visited Ridgeville, S. C., to investigate outbreak of smallpox.
- January* 13.—Visited Lamar, S. C., on account of smallpox epidemic. Addressed meeting there.
- January* 14.—Investigated smallpox outbreak at Langley, S. C.

January 15-16.—Visited Pageland, S. C., to investigate smallpox outbreak. Addressed meeting there.

January 17.—Visited Olympia Mills, Columbia, S. C., to look into reported smallpox.

January 18.—Visited Moncks Corner, S. C., to investigate smallpox outbreak.

January 19-24.—In Columbia on business with office.

January 25-26.—In Pageland, S. C., on account reported smallpox. Instituted quarantine and organized local board of health; advised with local authorities and addressed meeting.

January 27.—In Columbia, S. C., business with office.

January 28.—Visited Bookman, S. C., to investigate smallpox outbreak and vaccinate school children.

January 30.—Columbia, S. C., business with office.

February 1-7.—Columbia, S. C., business with office.

February 8.—Visited Harleyville, S. C., to investigate smallpox outbreak. Addressed meeting.

February 12-13.—Visited Moncks Corner and Pinopolis, S. C., investigating cases of smallpox and chicken pox. Addressed meeting.

February 14.—Visited Garners Ferry Road, Lakeland, Bellewood and Horrell Hill Schools investigating smallpox outbreak, vaccinating school children, etc.

February 15.—Interview with Drs. Fulmer and LaBorde, county physician Richland County, relative to county cases of smallpox, etc.

February 16.—Investigated reported cases of smallpox in Lexington County.

February 18.—Visited Johnston, investigating reported cases of smallpox. Addressed meeting of City Council and Board of Health.

February 21.—Mayesville, S. C., investigating cases of smallpox; visited schools, etc. Addressed meeting of town authorities.

February 23.—Richland County, vaccinated pupils at Bellewood, Beulah, Cross Roads and Congaree Schools (366 pupils).

February 26.—Visited North and Woodford, S. C., investigation of smallpox.

February 28.—At Greenville, S. C., investigating typhoid fever on Willimon's farms, 7 miles in county.

March 1-2-3.—In Greenville, S. C., investigating typhoid fever on Willimon's farms, 7 miles out.

March 4.—Camden, S. C., investigating cases of smallpox in Wateree Mill Village.

March 7.—Swansea, S. C., investigation of smallpox cases. Vaccinated children of Mack's School, Lexington County, 5 miles west of town.

March 11.—Columbia, S. C., investigating and diagnosing case of smallpox at University of S. C. hospital.

March 12.—Richland County, investigating cases of reported smallpox on Col. Wiley Jones' farm, and in consultation with Dr. Kreps, diagnosing case of smallpox one mile from city.

March 14.—Richland County, looking into enforcing quarantine in houses on Assembly Street Road.

March 19.—Columbia, S. C., consulting with Dr. Currell in matters pertaining to case of smallpox and vaccinating students of University of S. C.

March 21.—Columbia, S. C., Visited University of S. C. to determine matters relative to quarantine against smallpox.

March 24-25.—Bennettsville, S. C., investigating innumerable cases of smallpox in vicinity of town and vaccinating children of Level Green colored school. Addressed town authorities.

March 30.—Greenwood, S. C., investigating outbreak of smallpox in Hodges and Cokesbury neighborhoods.

April 6-7.—Mullins, S. C., investigating outbreak of smallpox. Addressed town authorities.

April 11-14.—Orangeburg, S. C., taking charge of County Health Officer's office and work.

April 15-16.—McCormick, S. C., investigating typhoid fever outbreak. Made general sanitary inspection of town and addressed large meeting of town and health authorities and citizens.

April 20.—Richland County, inspecting premises about Broad River bridge on account of nuisances complained of.

April 20-21.—Blenheim, S. C., investigation of outbreak of smallpox in vicinity of town.

May 11-12.—McColl, S. C., investigating cases of smallpox chickenpox, measles and whooping-cough. Instructing local board of health as to how function. Addressed town authorities and citizens at a called meeting, etc.

May 13.—Pelzer, S. C., investigated nuisances complained of, abating them, etc.

May 16.—Estill, S. C., investigating outbreak of typhoid fever. Showed local board of health how to function. Inspection of town. Addressed Town Council and Local Board of Health at called meeting, etc.

May 21.—Columbia, S. C., investigated cases of smallpox in City with Dr. Hayne.

May 24.—New Brookland, S. C., investigated cases of reported smallpox and instituting quarantine.

May 25-26.—Aiken, S. C., investigating outbreak of smallpox and deciding cases in dispute among physicians. Addressed large meeting of town authorities, members of the local board of health and citizens, and instituting quarantine of cases of smallpox.

May 27.—Chapin, S. C., to investigate outbreak of typhoid fever. Sanitary inspection of town, etc.

May 29-30.—Visited Walterboro, S. C., in consultation with town authorities and local health board. General inspection of town. Address to several hundred persons, including town authorities and school children.

June 5-6.—Pageland, S. C., investigating outbreak of typhoid fever, locating focus of infection, etc. Addressed town and health authorities.

June 7-8.—Abbeville, S. C., investigated outbreak of typhoid fever in town and vicinity. Addressed meeting of town authorities on sanitary matters.

June 9.—Visited Lexington County, investigating reported cases of smallpox in section of county in vicinity of farming lands of George Coffin Taylor.

June 15-16.—Marion, S. C., to interview Rep. E. T. Hughes, Chairman of Ways and Means Committee.

June 16-17.—Visit to Dillon, S. C., investigating nuisance. Consultation with local board of health.

June 18.—Columbia, S. C., advised with City Health Officer relative to duties of County Health Physicians, etc. (See Acts of 1917, page 628—Act No. 300).

June 20-22.—Visited Greer, S. C., to investigate outbreak of typhoid fever in Victor Mill Village. General sanitary inspection. Advised with mill authorities. Addressed meeting of citizens and authorities of town of Greer.

June 22-23.—Plum Branch, S. C., sanitary inspection of town. Investigating outbreak of typhoid fever. Addressed meeting of citizens and town authorities.

June 30.—Columbia, S. C., inspected sewerage disposal on premises No. 1114 Gadsden St. Ordered nuisance suppressed.

July 7.—Buffalo, S. C., investigated health conditions in and around Buffalo Mill Village.

July 8.—Columbia, S. C., investigated reported insanitary conditions at Smith's Stock Yard opposite Fair Grounds and stagnant water pool on Harper Estate lands in vicinity of stock yard.

July 24-25.—Seneca, S. C., investigating reported nuisances and advising with local town and health authorities.

July 25-28.—Abbeville, S. C., house to house inspection and health talks at public meetings on request of town and mill officials in Abbeville Mill Village.

July 29.—Ware Shoals, S. C., investigating reported nuisances and interviewing town and mill authorities.

July 30.—Colonial Heights, making inspection with Dr. Peters, U. S. N., of premises on which were cases of typhoid fever.

August 8-9.—Ware Shoals, S. C., addressed public, advertised meeting on health subjects on invitation mill authorities.

August 11-13.—Langley, Bath, Clearwater and vicinity, investigating and seeing pellagra cases (50-60) reported by Dr. W. D. Wright.

August 13-14.—Blenheim, S. C., conference with Dr. Chas. D. Napier, on case scarlet fever.

August 18-19.—Fairfax, S. C., and Sycamore, S. C., investigation of outbreak of small pox and vaccinating people of Sycamore.

August 19.—Arden, S. C., public meeting and talk on health matters and general conditions in Arden.

August 26.—Arden, S. C., public meeting and talk on health matters and assisting local Board of Health to organize.

September 1.—Honea path, investigation complaint of insanitary conditions. Addressed joint meeting of town Council and local Board of Health and citizens.

September 12.—Iexington, S. C., advised with local board of Health as to duties and how to handle certain health problems.

September 19.—Eau Clair, S. C., met town council and local Board of Health and organized latter.

September 22-23.—McConnellsville, S. C., investigated small-pox, 20 cases, colored. Vaccinated contacts and also 100 white children at schools at McConnellsville and Guthriesville. Made public addresses at both schools. Visited authorities of colored schools not in session and advises relative to law on compulsory vaccination.

September 29.—Confederate Soldiers' Home, inspection of premises on complaint of insanitary conditions about stables.

September 29.—Wessinger Place, Eau Claire, inspection premises on complaint.

October 1.—Investigated through County Health Officers

reported outbreak of diphtheria in "Rose Hill" and requested general sanitary inspection by county officers.

October 10.—Royster, S. C., inspection of abattoir.

October 20.—Arden, S. C., reported outbreak of scarlet fever in schools. Made investigation.

October 21.—Holly Hill, S. C., inspection of abattoir. investigating outbreak of smallpox.

October 22.—Blackville, S. C., investigating cases of scarlet fever and diphtheria and reported neglect of physicians in attendance to properly quarantine.

October 24.—Chester, S. C., investigating conditions in vicinity of city and visiting 13 cases smallpox and quarantining same.

October 31.—St. George, S. C., examining school children and making spleen and blood index for State Board of Health in connection with drainage done by Department of Malarial Control of the State Board of Health.

November 1-3.—St. George, S. C., examining school children and making spleen and blood index for State Board of Health in connection with drainage done by Department of Malarial Control of State Board of Health.

November 4-5.—Holly Hill, S. C., same as October 31st. See work done at St. George, S. C.

November 6-7.—Marion and Gresham, S. C., to diagnose four cases in family at request of Hon. S. T. Hughes, Chairman Ways and Means Committee of House of Representatives.

November 8.—Allendale and Beldoc, S. C., to investigate cases of reported poisoning in a family of Lees at latter place.

November 9-10.—Branchville, S. C., investigation of conditions.

November 14.—Honea Path, S. C., investigating complaints and urging local authorities and local board of health to function in accord with State health laws.

November 15-18.—Hampton, S. C., examining school children

and making spleen and blood index for government in connection with drainage work being done by Malarial Control Dept. of the State Board of Health.

November 20.—Eau Claire, S. C., seeing smallpox cases with Dr. Peters of U. S. N.

November 21.—Lowryville, S. C., investigating smallpox and vaccinating contacts and others.

November 22.—Anderson, S. C., investigating complaint relative to City garbage dump, and advising with town council and local board of health relative to the same.

November 25.—McColl, S. C., diagnosing case of smallpox for physicians.

November 27-28.—Hampton, S. C., arranging with school authorities for physical examination of school children preparatory to putting on a tonsillar and adenoid clinic.

November 28.—Varnville, S. C., (Same as Hampton—See above).

November 29-30.—Furman, S. C., (See Hampton, S. C.)

December 4-6.—Varnville, S. C., physical examination of 154 school children in Varnville white school.

December 7.—Crocketville, S. C., physical examination of 132 children in Crocketville white school.

December 8-9.—Hampton, S. C., physical examination of 154 children in the Hampton white school.

December 10.—Hampton, S. C., physical examination of 19 children of the Saunders Branch School and 18 children of the Millville School of Hampton County.

December 21.—Pacific Mills, Richland County, investigated general sanitary conditions of property on Bluff Road adjoining mill property owned by L. T. Wilds in connection with outbreak of typhoid fever.

December 31.—Wedgefield, S. C., investigating outbreak of typhoid fever—six cases in one family of negroes, with three deaths.

Included in work of the last year has been microscopic work in connection with work in department of Malarial Control, writing bulletins for distribution throughout the State, and office work of various kinds, including certain correspondence, etc., etc.

A. H. HAYDEN, M. D.
Epidemiologist.

MINUTES.

Columbia, S. C., January 20, 1921.

At a call meeting of the Executive committee of the State Board of Health held in the office of the Secretary, 512 Palmetto Building, Columbia, S. C., at 10 o'clock A. M., January 20, 1921, the following were present: Dr. Robert Wilson, Jr., Chairman; Dr. E. A. Hines, Dr. Wm. Eggleston, Dr. Robt. A. Marsh, Dr. W. M. Lester, Dr. C. C. Gambrell, Dr. M. J. Walker, Dr. J. D. Heidtman, and the Comptroller General.

The minutes of the previous meeting were read and approved.

The first business to come before the board was a discussion of the milk regulation. A representative appeared for Charles R. Allen, and Mr. G. C. Balzor appeared for the Merrell-Soule Corporation. The matter was thoroughly debated and the regulation passed by the board at its last meeting (December 8, 1920) was amended to read as follows:

"The sale of condensed or evaporated skimmed milk is allowed, but it shall be unlawful to sell the said condensed or evaporated skimmed milk except under the following regulations: In addition to compliance with all existing laws the said condensed or evaporated skimmed milk to be sold in packages or containers containing not less than one gallon (10 lbs.), which packages or containers shall be hermetically sealed at the time of sale; also, that at the stores, groceries, shops, or places where such condensed or evaporated skimmed milk is sold a sign printed or painted in black letters on white background and on which the letters are at least five inches high and worded as follows, must be displayed, 'Condensed or evaporated skimmed milk should not be fed to babies, children or invalids—it is lacking in food value.'

"The sale of powdered skimmed milk made by the spray process, or not heated to a temperature of over 180 degrees in the

process of making, is not affected by the above regulation."

The resignation of Mrs. Annie I. Rembert, Field Secretary of the State Tuberculosis Association, was received and accepted, effective January 1, 1921.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

Attested:

Columbia, S. C., March 22, 1921.

The regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary, 512 Palmetto Building, Columbia, S. C., at 10 a. m., March 22, 1921, with the following members present: Dr. Robert A. Marsh, Dr. C. C. Gambrell, Dr. E. A. Hines, Dr. Miles J. Walker, Dr. Wm. Eggleston, Dr. W. M. Lester, Dr. J. D. Heidtman and the Secretary.

The minutes of the previous meeting were read and approved.

The first business before the Committee was the letting out of the contract for the free distribution of the diphtheria antitoxin, smallpox vaccine and typhoid vaccine. Bids from E. R. Squibb & Sons, New York, were accepted, this firm being the only bidders, on the following specifications submitted:

New York, March 17, 1921.

State Board of Health, Columbia, South Carolina.

Gentlemen:

In response to your communication of March 8th, requesting quotations on diphtheria antitoxin, smallpox vaccine and typhoid vaccine, for use by the South Carolina State Board of Health, we take pleasure in submitting our proposition.

DIPHTHERIA ANTITOXIN.

Basing your 1921 requirements on a par with our 1920 purchases we agree to supply this produce at the following prices:

1,000 units.....	\$.50
5,000 units.....	1.50
10,000 units.....	2.50
20,000 units.....	4.50

Provided however that should the total amount of antitoxin distributed in one year exceed \$15,000, a reduction of 5% from these prices will be made on all diphtheria antitoxin used in excess of said amount, and should the total amount of antitoxin distributed in one year be less than \$10,000, an increase of 10% on these prices will be made.

We agree to pay the State distributors, as commission for services in handling this diphtheria antitoxin, the following fixed amounts, regardless of the total volume of business:

Commission on each package of

1,000 units distributed.....	\$.07 per package
5,000 units distributed.....	.22 per package.
10,000 units distributed.....	.37 per package

We agree to establish, in Columbia, a central Distributing Depot, under the personal direction of a competent manager, acceptable to your Board, and to operate and maintain said depot in an efficient manner, at our own expense. This depot will take charge of the storage of your reserve stock of diphtheria antitoxin, restock the stations from time to time, as may be necessary, record and tabulate all stock shipped to and distributed by each station and perform such other detail work as may be delegated to it by your Board.

The salaries of all depot employees shall be paid by us together with the other expenses of the depot, and the personnel of the depot shall be acceptable to the Board.

All transportation charges on diphtheria antitoxin shall be paid by us.

SMALLPOX VACCINE VIRUS.

We agree to supply smallpox vaccine virus in ice containers, and guarantee its potency, upon reaching Columbia, at the following scale of prices:

\$.06½ per tube for first \$5,000.00 of purchase
.05½ per tube for second \$5,000.00 of purchase
.04½ per tube for third \$5,000.00 of purchase.

Basing 1921 requirements on 1920 consumption when your purchases reach \$5,000.00 the price, per tube, will be automatically reduced from \$.06½ to \$.05½ and when the purchases total \$10,000 the price automatically drops from \$.05 to \$.04½. Thus should an epidemic occur you are guaranteed vaccine virus at \$.04½ per tube.

All unused or out of date vaccine virus may be returned for credit at \$.05 per tube and all transportation charges to Columbia will be paid by us.

TYPHOID VACCINE.

We agree to supply such typhoid vaccine, plain or mixed, as you may need during the year in 1 c. c. ampules at \$.06 per ampule; transportation charges prepaid to Columbia.

In submitting this proposal we guarantee that all biological products, to be supplied by us under this proposal, have been prepared or manufactured entirely by us, in our laboratories; that we hold a license issued by the United States Public Health Service for the preparation or manufacture of said product and that said biological products have been prepared or manufactured under our direct supervision in strict accordance with all rules and regulations of the United States Public Health Service, both as to preparation and test for potency and sterility.

All biological products furnished under this proposal are to be in accordance with the specifications transmitted with your letter of March 8th.

Thanking you for the courtesy, we are,

Very truly yours,

E. R. SQUIBB & SONS,

JOHN F. ANDERSON,

Vice President & Director.

Contract with E. R. Squibb & Sons for supplying biological products is as follows:

CONTRACT FOR SUPPLYING BIOLOGICAL PRODUCTS.

Articles of Agreement, entered into this 5th day of April, A. D. 1921, at Columbia, South Carolina, by and between the Executive Committee of the South Carolina State Board of Health, herein-

after known as the party of the first part, and E. R. Squibb & Sons, of New York, N. Y., hereinafter known as the party of the second part,

Witnesseth:

1. The party of the first part agrees that the party of the second part shall have the exclusive right to supply all diphtheria antitoxin, vaccine virus (smallpox vaccine) and anti typhoid bacterin used by or under the direction of the South Carolina State Board of Health for a period of one year beginning July 1, 1921.

2. The party of the first part agrees to pay for all such products as may be used by them, or under their direction, monthly, said payments to be based upon prices as set forth and provided for in paragraph three hereof.

3. The party of the second part agrees to supply the products enumerated in paragraph one hereof at the respective prices set opposite each item, and agrees that all diphtheria antitoxin supplied under this contract shall have as a minimum consideration the strength set opposite each respective size package.

DIPHTHERIA ANTITOXIN.

Minimum	Concentration per cc.	Price
1,000 Units	600	\$0.50
5,000 Units	1200	1.50
10,000 Units	1800	2.50
20,000 Units	2000	4.50

Provided however, that should the total amount of diphtheria antitoxin purchased in one year, at the above prices, exceed the sum of \$15,000.00 the party of the second part agrees to a reduction of five per cent from these prices on all purchases in excess of said \$15,000.00, and should the total amount of diphtheria antitoxin purchased in one year, at these prices, be less than \$10,000.00, the party of the first part agrees to an increase of ten per cent on these prices, which increase shall apply to all purchases made during the year and adjusted June 30, 1922.

VACCINE VIRUS.
(Smallpox Vaccine)

Packed in containers of ten tubes each:

Until the total purchases of the year amount to \$5,000;
per tube \$0.065

After the total purchases for the year amount to \$5,000
and until the total purchases for the year amount to
\$10,000; per tube 0.055

After the total purchases for the year amount to
\$10,000.00; per tube 0.045

(To explain this sliding scale—The price per tube shall be
6½ cents for the first \$5,000.00 of purchase; 5½ cents per tube for
the second \$5,000.00 of purchase; and 4½ cents per tube for all
purchases in excess of \$10,000.00).

TYPHOID VACCINE.

Individual ampules, per ampule06

3. The party of the second part agrees to pay all State distributors of diphtheria antitoxin as commission for services rendered in distributing said antitoxin, the following fixed amounts regardless of the total amount purchased in one year by the party of the first part, to-wit:

For each 1,000 unit package distributed	\$0.07
For each 5,000 unit package distributed	0.22
For each 10,00 unit package distributed.....	0.37
For each 20,000 unit package distributed	0.50

The party of the second part agrees to pay said commission to said distributors monthly.

The party of the second part agrees to exchange, without charge, all packages of diphtheria antitoxin upon which the potency date has expired for fresh products of the same character.

4. The party of the second part further agrees to install and operate, at its own expense, a central distributing depot in Columbia, South Carolina, and to maintain an efficient system for the distribution and supply of diphtheria antitoxin, smallpox vaccine and anti-typhoid bacterin. The party of the second part agrees to maintain at its own expense, suitable cold storage facilities for the proper storage of said products.

The party of the second part agrees that said central distrib-

uting depot shall be under the personal direction of a competent manager, acceptable to party of first part, shall stock and re stock the State Distributors of diphtheria antitoxin from time to time as may be necessary; compile the necessary records of antitoxin held and distributed by each State Distributor; and perform such other work as may be delegated to it by the party of the first part together with all detail work necessary to operating an efficient distributing service.

The party of the second part agrees to carry in said depot a reserve stock of diphtheria antitoxin of sufficient size to meet all epidemic emergencies and to keep same in refrigeration.

5. The party of the second part agrees that all vaccine virus will be shipped in ice containers and guarantee its potency upon arrival in Columbia, South Carolina.

6. The party of the second part agrees to supply all diphtheria antitoxin, smallpox vaccine virus and typhoid vaccine under a special label, as approved by the Secretary of the South Carolina State Board of Health.

7. The party of the second part agrees to pay all transportation charges on diphtheria antitoxin from New York to the Central Distributing Depot and from said Depot to the State Distributors, and all transportation charges on smallpox vaccine and typhoid vaccine from New York to said Central Depot at Columbia.

8. The party of the second part further agrees to any reasonable change or modification of the plan of distribution which the party of the first part may deem advisable or expedient; to establish such additional distributing depots as may be necessary in the opinion of the South Carolina State Board of Health, and specifically agrees that this contract may be continued from year to year upon the same terms and conditions unless either party shall advise the other of a desire to discontinue or annul the same, ninety days prior to the expiration of any one year.

9. The party of the second part agrees and has deposited with the Secretary of the State Board of Health two surety bonds for \$1,000.00 each, guaranteeing the faithful performance of this contract.

10. The party of the second part agrees and guarantees that

all products supplied under this contract will conform in every respect to all rules and regulations of the United States Public Health Service.

In witness whereof we have set our hands and affixed our seal this 5th day April, A. D. 1921, in duplicate.

EXECUTIVE COMMITTEE, SOUTH CAROLINA STATE BOARD OF
HEALTH.

By JAMES A. HAYNE (L. S.)
Secretary, State Board of Health.
E. R. SQUIBBS & SONS,
By JOHN F. ANDERSON L. S.
Vice President.

Signed and Sealed in
the presence of:

Fred S. Campbell
E. W. Grieshaber.

Signed in the
presence of

Sol Singer
Rita Ewart.

A communication was read from Mr. E. L. Filby, State Sanitary Engineer, in regard to the organization of an Engineering Division. It was decided by the Board that it would not be advisable at this time to organize such a Bureau.

A letter was read from Capt. L. M. Fisher, Sanitary Engineer, U. S. Public Health Service, in charge of malaria control, requesting that his salary be supplemented by the State Board of Health. After some discussion it was decided that it would not be advisable to supplement his salary.

The payrolls of the different departments for which appropriations were made in lump sums; that is, the payroll of the Bureau of Child Hygiene, Department of County Health Work, Department of Venereal Disease Control, and South Carolina Sanatorium, were read and approved. Payrolls as follows:

PAYROLL OF BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH
NURSING.

Mrs. Ruth A. Dodd, Director	\$200.00
Miss Malinda McC. Murphy, District Supervisor	150.00
Ellen Woods Carter, Field Nurse	125.00
Annie C. Aiken, Secretary	110.00

(Note)

Mrs. Dodd receives from Metropolitan \$62.50 a month, making her salary \$262.50 a month.

Miss Aiken receives from Metropolitan \$20.83 a month, from Red Cross \$15.00 a month, from Bureau Child Hygiene checking account \$4.17, making her salary \$150.00 a month.

Last year \$20.83 from Metropolitan was also paid to Miss Murphy, but because of the fact that the supervision this year is being done by all three of the district supervisors, this is not being paid to Miss Murphy.

SALARY LIST—SOUTH CAROLINA AND PALMETTO SANATORIA, 1921.

Ernest Cooper, Supt.	\$250.00	per mo.
J. C. Bonner, Resident Physician	166.66	per mo.
Pearl Leitzsey, Graduate Nurse	100.00	per mo.
Carrie Spivey, Graduate Nurse	100.00	per mo.
3 Pupil Nurses @ 18.00 each per mo.	54.00	per mo.
Housekeeper for S. C. Sanatorium	75.00	per mo.
Asst. Housekeeper for S. C. Sanatorium	30.00	per mo.
Cook for S. C. Sanatorium	35.00	per mo.
Assistant Cook for S. C. Sanatorium	25.00	per mo.
Dishwasher, S. C. Sanatorium	20.00	per mo.
5 Maids, S. C. Sanatorium, @ \$15.00 per mo. each	75.00	per mo.
Manager Dairy and Farm	80.00	per mo.
Mechanic	60.00	per mo.
2 laborers @ \$30.00 each per month	60.00	per mo.
Housekeeper, Palmetto Sanatorium	50.00	per mo.
Graduate Nurse, Palmetto Sanatorium	75.00	per mo.
Maid, Palmetto Sanatorium	15.00	per mo.
Cook, Palmetto Sanatorium	30.00	per mo.
Laundresses	\$60.00 to 66.00	per mo.

(Approx.)

SALARY TABLE FOR THE DIVISION OF V. D. CONTROL.

Administrative Personnel:

1 State V. D. Officer	\$2,700.00	per annum
2 Clerk and Stenographer.....	1,500.00	per annum
3 Legal Adviser	1,200.00	per annum

Clinic Personnel:

1	Full time physician	\$ 2,400.00	per annum
2	Part time physicians	1,200.00	per annum
3	Supervising nurse	1,560.00	per annum
4	Full time nurse (trained)	1,500.00	per annum
5	Part time nurse (trained or practical) ..	600.00	per annum
6	Part time attendant.....	600.00	per annum
7	Part time attendant	600.00	per annum
8	Consultant (Physician)	600.00	per annum
9	Maid & Janitor	240.00	per annum

DEPARTMENT OF COUNTY HEALTH WORK & RURAL SANITATION

	State	I. H. B.
L. A. Riser, M. D., State Director	\$1,800.00	\$1,800.00
R. G. Hamilton, M. D., Health Officer		
Fairfield County	1,374.96	1,374.96
Leon Banov, M. D., Health Officer,		
Charleston County	1,374.96	1,374.96
Walter Boone, M. D., Health Officer,		
Cherokee County	1,374.96	1,374.96
C. H. Verner, M. D., Health Officer,		
Darlington County	1,374.96	1,374.96
Roy P. Finney, M. D., Health Officer,		
Newberry County	1,374.96	1,374.96
E. Paul Knotts, M. D., Health Officer,		
Lee County	687.48	687.48
D. D. Bullock, M. D., Health Officer,		
Orangeburg County	1,374.96	1,374.96

Lee County did not appropriate sufficient funds to continue the work of the Department throughout the entire year. However, it is our plan to keep this Department in operation during the first six months.

Orangeburg County will receive State aid throughout the first five months only. Beginning the 1st, of June, the salary of the Health Officer will be paid by County funds.

	State	I. H. B.
Mary C. Dibble, Office Secretary	\$ 750.00	750.00
Louise Powell, Clerk, Fairfield County ..	90.00	90.00

Julia Johnstone, Clerk, Newberry County	90.00	90.00
L. B. Hughes, Clerk, Orangeburg County..	90.00	90.00
Part-time clerk, Cherokee County	55.00	55.00
Part-time clerk, Darlington County	35.00	35.00

The State Health Officer was directed to make a careful investigation of the activities of the Department of Rural Sanitation and the Bureau of Child Hygiene to determine how they were functioning in the various counties in which work was being done.

Copy of a letter was read from Dr. Jervey to Dr. E. F. Parker, of Charleston, S. C., and the State Health Officer was directed to reply to Dr. Parker, correcting some obvious errors in the letter of Dr. Jervey.

Regulations of the South Carolina State Board of Health for the prevention of the spread of venereal diseases were acted upon and adopted by the Board as follows:

REGULATIONS OF THE SOUTH CAROLINA STATE BOARD OF HEALTH
FOR THE PREVENTION OF THE SPREAD OF VENEREAL DISEASES.

Under, and by virtue of Section 5 of an Act Relating to Venereal Diseases, approved February 14, 1919, being Act 17, Page 30, Acts of 1919, XXI Statutes at Large 30, the following rules and regulations are hereby adopted and ordered to be properly promulgated by the State Board of Health of South Carolina:

Rule 1:—Syphilis, gonorrhoea, and chancroid, hereinafter designated venereal diseases, are hereby declared to be contagious, infectious, communicable and dangerous to public health.

Rule 2:—Any physician or other person who makes a diagnosis in, or treats a case of syphilis, gonorrhoea, or chancroid shall report the same as hereinafter provided, and superintendent or manager of a hospital dispensary, or jail, or charitable or penal institution, in which there is a case of venereal disease shall immediately segregate the same and shall report such case immediately in writing to the local health officer

stating the address, age, sex, color and occupation of the diseased person, and the date of the onset of the disease, and the probable source of the infection. The report monthly to the state health officer on forms report shall be sent to the local health officer. who shall prescribed and furnished by the State Board of Health: Provided, however, that all cases occurring outside of incorporated towns or villages, or within incorporated towns or villages, not having a local health officer, shall be reported by the attending physician to the State Health Officer direct.

Rule 3:—State, county and municipal health officers, in their respective jurisdictions, are hereby directed and empowered, when in their judgment it is necessary to protect the public health, to make examination of persons being or suspected of being infected with venereal diseases, to require persons infected with venereal diseases to report for treatment until cured or to submit to treatment provided at public expense, and to isolate persons infected or reasonably suspected of being infected with venereal disease.

Rule 4:—All persons who shall be confined or imprisoned in any State, county or city prison of this State may be examined and treated for venereal disease by the health authorities or their deputies. The State, county and municipal boards of health shall have authority to take over such portion of any State, county or city prison as may be necessary for a board of health hospital, wherein all persons who shall have been confined or imprisoned and who are suffering with venereal disease at the time of the expiration of their terms of imprisonment shall be isolated and treated at public expense until cured, or in lieu of such isolation such person may, in the discretion of the Board of Health, be required to report for treatment to a licensed physician or submit to treatment provided at public expense.

Rule 5:—It shall be the duty of every physician and of every other persons who examines or treats a person having

syphilis, gonorrhoea, or chancreoid, to instruct him, in measures for preventing the spread of such disease, and of the necessity for treatment until cured, and to hand him a copy of the circular of information obtainable for this purpose from the State Board of Health.

Rule 6:—Upon receipt of a report of a case of venereal disease it shall be the duty of the local health officer to institute measures for the protection of other persons from infection by such venereally infected person.

(a) Local health officers are authorized and directed to quarantine persons who have, or are reasonably suspected of having syphilis, gonorrhoea, or chancreoid, whenever, in the opinion of the said local health officer, or State Board of Health or its Secretary, quarantine is necessary for the protection of the public health. In establishing quarantine the health officer shall designate, and define the limits of the area in which the person known to have, or reasonably suspected of having syphilis, gonorrhoea, or chancreoid and his immediate attendant, are to be quarantined, and no person, or other than the attending physician, shall enter or leave the area of quarantine without the permission of the local health officer.

No one but the local health officer shall terminate said quarantine, and this shall not be done until the disease person has become noninfectious as determined by the local health officer or his authorized deputy through the clinical examination and all laboratory tests, or until permission has been given him so to do by the State Board of Health or its Secretary.

(b) The local health officer shall inform all persons who are about to be released from quarantine for venereal disease, in case they are not cured, what further treatment should be taken to complete their cure. Any person not cured, before release from quarantine shall be required to sign the following statement after the blank spaces have been filled to the satisfaction of the health officer.

Iresiding at

hereby acknowledge the fact that I am at this time infected withand agree to place myself under the general medical care of
(name of physician or clinic)

Addresswithin hours, and that I will remain under treatment of said physician or clinic until released by the health officer ofor until my case is transferred with the approval of said health officer to another regularly licensed physician or approved clinic.

I hereby agree to report to the health officer within four days after the beginning of treatment as above agreed, and will bring with me a statement from the above physician or clinic of the medical treatment applied in my case, and thereafter will report as often as may be demanded of me by the health officer.

I agree, further, that I will take all precautions recommended by the health officer to prevent the spread of the above disease to other persons, and that I will not perform any act which would expose other persons to the above disease.

I agree until finally released by the health officer to notify him of any change of address and to obtain his consent before moving my abode outside his jurisdiction.

.....
Signature

.....
Date

All persons signing the above agreement shall observe its provisions, and any failure so to do shall be a violation of these regulations.

All such agreements shall be filed with the health officer and kept inaccessible to the public.

Rule 7:—No druggist or other person not a physician licensed under the laws of the State shall prescribe or recommend to any person any drugs, medicines or other substances to be used for the cure or alleviation of

gonorrhoea, syphilis, or chancroid, or shall compound any drugs or medicines for said person from any written formula or order not written for the person for whom the drugs or medicines are compounded and not signed by a physician licensed under the laws of the State.

Columbia, S. C., April 18th, 1921.

The regular annual meeting of the Executive Committee of the State Board of Health was held at the Jefferson Hotel, Columbia, S. C., at 11:30 p. m., April 18th, 1921, with the following members present: Dr. Robert Wilson, Jr., Chairman; Dr. Robert A. Marsh, Dr. C. C. Gambrell, Dr. Wm. Egleston, Dr. E. A. Hines, Dr. W. M. Lester, Dr. John D. Heidtman, and the Secretary, Dr. James A. Hayne.

The minutes of the last meeting were read and approved.

Regular routine business was transacted and a petition, headed by Dr. Floyd Rogers, in regard to a mill pond was presented and the State Health Officer was directed to take such steps as might be necessary to preserve the health of the community.

The Board then adjourned, to meet immediately after the election of a new Board by the South Carolina Medical Association, this being the year in which the election of members of the Board is to take place.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

Columbia, S. C., April 19th, 1921.

The Executive Committee of the State Board of Health met, as arranged for on the preceding day, at 4 p. m., in the Ways and Means Committee Room at the State House, with all members present who had attended the meeting on the 18th, the Board being constituted as before with all of the old members re-elected. Dr. Robert Wilson, Jr., was elected Chairman and Dr. Jas. A. Hayne, Secretary.

A vote of appreciation was cast by the Board in regard to the

excellent maps which were prepared by Mr. E. L. Filby, State Sanitary Engineer, and others.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

Columbia, S. C., June 28th, 1921.

The regular meeting of the Executive Committee of the South Carolina State Board of Health was held in the office of the Secretary, 512 Palmetto Bnilding, Columbia, South Carolina, at 11 o'clock a. m., June 28th, at which time the following members were present: Dr. Robert Wilson, Chairman; Dr. Robert A. Marsh, Dr. Miles J. Walker, Dr. C. C. Gambrell, Dr. Wm. Egleston, Dr. E. A. Hines, Dr. W. M. Lester, Dr. J. D. Heidtman and the Secretary.

The minutes of the previous meeting were read and approved.

The principal business before the Board was the hearing of the report of the committee composed of Dr. Wm. Egleston, Dr. W. M. Lester, Dr. Robert A. Marsh, Miss Chauncy Blackburn and the State Health Officer, who had been delegated at the last meeting of the Board to visit the South Carolina and Palmetto Sanatoria and to report conditions. A full report was submitted as follows:

"To the Executive Committee of the State Board of Health:

"On June 21st, 1921, your Committee, composed of Dr. Wm. Egleston, Dr. Robert A. Marsh, and Dr. W. M. Lester, accompanied by the State Health Officer and Miss Chauncey Blackburn, Field Secretary for the South Carolina and Palmetto Sanatoria, visited both Sanatoria and beg to report as follows:

"We found the painting of the Sanatoria progressing rapidly and found the general condition of the plants excellent. We recommend the following improvements, which are necessary for the better care of the patients atthe Sanatoria:

"That the septic tank is placed too near the building and that the odor in hot weather is disagreeable to the sick patients in the infirmary building of the sanatorium. We recommend

that the State Sanitary Engineer submit plans for removing or by-placing the septic tank and the building of a new one which can take care of both the South Carolina Sanatorium and the Palmetto Sanatorium.

"We recommend that a plumber be employed to go over the plumbing system and to make such repairs as are necessary, especially in the men's ward and the women's ward.

"We also recommend that some method be used to increase fire protection, such as an elevated tank for a reserve water supply.

"Your Committee does not believe that the patients receive a sufficient quantity of milk; we therefore recommend that the Superintendent be authorized to purchase more Holstein cows so that an adequate milk supply may be maintained.

"We recommend the employment of a dentist to make periodical visits to the sanatorium for the purpose of attending to the teeth of the patients.

"We recommend that separate trays be prepared for those who are confined to bed and that separate menus be prepared for those patients suitable to their condition.

"We recommend that a dietitian be employed for the purpose of preparing menus for the very sick.

"We recommend that a telephone be installed at the Palmetto Sanatorium to connect with the South Carolina Sanatorium.

"We recommend that isolation rooms—one room for males and one for females—be built at the Palmetto Sanatorium so that very ill patients can be placed in isolation.

"We recommend the planting of pecan and fruit trees and shade trees for the Sanatoria.

"We recommend that more variety of beverage be given to the patients, such as iced tea and coffee.

"We recommend that ice water be served at all meals.

"We recommend that a nurses' home be built so that proper accommodations may be furnished the nurses.

"We recommend that rocking chairs be furnished in the wards for the patients.

"We earnestly recommend that something be done in regard to the exhaust of the Delco system so that it may not annoy patients by its continuous operation.

"We recommend further that each of these recommendations

be carried out as soon as possible, and as to those recommendations which require special appropriations from the legislature, that each member of the Board make it his duty to see the representatives in regard to these essential improvements.

"We recommend that the Doctor in charge shall inspect once a week the patients' lockers so that they may be kept clean.

Respectfully submitted,

ROBERT A. MARSH, M. D.

WM. M. LESTER, M. D.

WM. EGLESTON, M. D.

Committee for Inspection S. C. and Palmetto Sanatoria.

The report submitted was freely discussed and approved, and the State Health Officer was directed to see that a copy of the report of the Committee be given to the Superintendent, Dr. Ernest Cooper, and that he be directed to carry out, as far as possible, the recommendations of the Committee.

It having been called to the attention of the Board that some of the textile plants of the State are using as containers for drinking water open buckets and dippers, which are very unsatisfactory and insanitary, the following regulation was passed by the Board:

"All textile and industrial plants are required to furnish their employees sanitary drinking fountains or sanitary drinking cups and to keep receptacles in which drinking water is kept properly covered so as to exclude dust, etc."

There being no further business the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

Columbia, S. C. Sept. 1, 1921.

At the regular meeting of the Executive Committee of the State Board of Health held in the office of the Secretary, Columbia, S. C., September 1, 1921 the following members were present: Dr. Robert Wilson, Chairman; Dr. Robert A. Marsh, Dr. E. A. Hines, Dr. Wm. M. Lester, Dr. Wm. Eggleston, Dr. M. J. Walker, the newly appointed pharmaceutical member, Dr. S. C. Calder, and the Secretary.

The minutes of the last meeting were read and approved.

After discussion of the minutes the Secretary was directed to carry out the specific instructions of the resolutions. The Secretary was also instructed to employ a publicity agent and publish a booklet on the South Carolina and Palmetto Sanatoria, and to bring to the attention of the public the facilities offered by these institutions.

The report of Dr. F. A. Coward, Director of Laboratory, was read.

The report of Dr. C. V. Aiken, Director of Venereal Disease Control, was read.

It was moved by Dr. Egleston, seconded by Dr. Marsh, that each member of the Board visit in rotation the South Carolina and Palmetto Sanatoria, one member each month, and make a written report with recommendations to be read at the next meeting of the State Board of Health.

It was moved by Dr. M. J. Walker, seconded by Dr. Marsh, that Miss W. M. Riser and Miss Eva Grieshaber be paid \$25 each per month for their services in keeping the records of the Sanatoria, this duty having devolved upon them after the resignation of the Field Secretary.

A letter was read from Mr. E. L. Filby, State Sanitary Engineer, requesting the purchase of one engineer's transit, one set field books, etc., at a total cost of \$450.00. This was for the purpose of undertaking a layout of the sewage disposal plant for the Sanatoria and preparing an estimate of its cost. On motion of Dr. Egleston the Sanitary Engineer was directed to see whether he could not rent these instruments instead of purchasing them outright.

A resolution was introduced and passed that the records of all hospitals in South Carolina pertaining to births and deaths be available for inspection at all times, by the State Health Officer or his representative.

The regulation passed at the last meeting of the Board regarding sanitary drinking receptacles was modified by inserting the word "individual" after the word "or" and before the word "sanitary" so that the regulation as modified shall read:

"All textile and industrial plants are required to furnish their employees sanitary drinking fountains, or individual sanitary drinking cups, and to keep receptacles in which drinking water is kept properly covered so as to exclude dust, etc."

The following Committees were appointed by the Chairman:

Sanitary Inspection State Penal and Charitable Institutions:

Dr. Robert A. Marsh,
Dr. Miles J. Walker,
Dr. E. A. Hines,

Sanitary Inspection State Colleges and Schools:

Dr. Wm. Egleston,
Dr. W. M. Lester,
Dr. S. C. Calder.

Compiling Code:

Dr. E. A. Hines,
Dr. W. M. Lester,
Dr. C. C. Gambrell.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

Columbia, S. C., October 14, 1921.

The regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary, 512 Palmetto Building, Columbia, S. C., Oct. 14, 1921, at 10 o'clock in the morning, with the following members present: Dr. Robert Wilson. Jr., Chairman; Dr. Robert A. Marsh, Dr. Wm. Egleston, Dr. E. A. Hines, Dr. C. C. Gambrell Dr. Wm. M. Lester, Dr. Miles J. Walker, Dr. S. C. Calder and the Secretary.

The minutes of the previous meeting were read and approved.

A report was read showing the excellent work of Dr. E. Paul Knotts of Orangeburg. Upon motion by Dr. Egleston special commendation was made of Dr. Knotts' excellent work in Orangeburg County and the Secretary was directed to write him to that effect.

Upon presentation of the facts in regard to the work of Dr. C. H. Verner in Darlington County and his absence from his work without permission from the Director of Rural Sanitation, and for other irregularities in the conduct of his work, Dr. Grambell moved that Dr. Verner's resignation be requested. This was seconded by Dr. Marsh.

It was moved by Dr. Gambrell that the Director of the Labora-

tory be directed to report to the Dean of the Medical College for special duty and research work at the Medical College in Charleston.

Dr. P. D. Brooker appeared before the Board with a plan for dental work at the tuberculosis sanatoria. Upon a motion by Dr. Egleston, Dr. Ernest Cooper, Superintendent of the South Carolina and Palmetto Sanatoria, was directed to confer with Dr. Brooker in regard to having dental work done for the patients of these two institutions.

It was moved and seconded that the Superintendent of the South Carolina and Palmetto Sanatoria be authorized to purchase a mule for work at the Sanatoria, and also a carload of lime.

As all the committee reports were not ready, the reports were deferred until the next regular meeting of the Board.

Plans were submitted for connection with the city electric line so that the lighting of the South Carolina and Palmetto Sanatoria be made direct and that other equipment necessary for utilizing this current be perfected; that the contract be awarded to the lowest bidder. A Committee, consisting of Dr. Hayne and Dr. Cooper, were appointed to obtain and award contracts.

It was also moved and seconded that an automatic telephone system be installed, connecting the various buildings of the South Carolina and Palmetto Sanatoria.

It was also moved and seconded that a temporary building be erected to take care of the moribund patients at the Palmetto Sanatorium, it being deemed inadvisable to have these patients dying in the wards with those who had a chance of recovering.

It was moved and seconded that an exhibit of the activities of the State Board of Health be sent to the Southern Medical Association at Hot Springs.

The report of the inspection of the South Carolina and Palmetto Sanatoria having been made by Dr. Walker, it was ordered that his report be transmitted to Dr. Cooper with instructions to carry out his recommendations at once.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

Columbia, S. C., December 8, 1921.

The regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary at 10 o'clock in the forenoon on December 8, 1921, with the following members present: Dr. Robert Wilson Jr., Chairman; Dr. William Egleston, Dr. E. A. Hines, Dr. Robert A. Marsh, Dr. C. C. Gambrell and Dr. S. C. Calder. The absence of Dr. Miles J. Walker was explained in a telegram to the Secretary, "Have case eclampsia. Impossible to get away." Dr. Wm. M. Lester also was absent on account of urgent professional business. In the absence of the Secretary, Dr. James A. Hayne, Dr. C. V. Akin, State Venereal Disease Officer, was requested by the Chairman to act as Secretary.

The minutes of the last meeting were read and approved.

As the special order of business, the Chairman directed the Acting Secretary to read the annual reports of the various bureaus and divisions of the State Board of Health. The following reports were read in order and accepted as information: Report of Hotel Inspection work, Mr. J. H. Woodward; report of Hygienic Laboratory, Dr. F. A. Coward, Director; report of Bureau of Child Hygiene, Mrs. Ruth A. Dodd; report of Bureau of Vital Statistics, Mr. C. W. Milier, Assistant State Registrar. Dr. L. A. Riser, in charge of the Department of Rural Sanitation and County Health Work, presented his annual report in person, which was read by him at the request of the Chairman. Report of the Division of Venereal Disease Control, Dr. C. V. Akin. All of the annual reports as read were received as information by the Board at the direction of the Chairman.

Following the reading of the annual reports certain reports of inspections of State institutions were read by the inspecting officers. Dr. Wm Egleston read the report of the regular monthly inspection of the South Carolina Sanatorium made by him. Dr. Robert A. Marsh read the report of his inspection of the State Hospital and of the South Carolina State Penitentiary. Dr. E. A. Hines read the following reports of inspections made by him: the State Training School for Feeble-minded Boys, at Clinton, S. C.; S. C. Reformatory for Negro Boys, Lexington County; South Carolina Training School for Girls, Lexington County; Confederate Soldiers Home. At the direction of the Chairman the Acting Secretary read the report of Dr. Miles J.

Walker of his inspection of the Industrial School for Boys at Florence.

When called upon by the Chairman to submit a committee report on inspections of State educational institutions, Dr. Wm. Egleston advised the Board that insasmuch as the inspections had not been completed a report would not be submitted at this meeting.

Dr. C. C. Gambrell suggested dividing the inspection work and recommended that two members of the Board be assigned to each inspection. Dr. Wm. Egleston agreed that it would be well to follow some such plan during the coming year. Dr. Gambrell presented an exhaustive report of his inspection of the South Carolina Sanatorium, with recommendations. Dr. Gambrell did not submit a written report. Dr. Gambrell recommended the expenditure of surplus funds appropriated for the Sanatorium for additional equipment and improvements of the grounds. Dr. Gambrell specifically recommended the equipment of an examining room with all of the appliances and instruments required for scientific diagnosis. In addition to this, it was recommended that complete equipment be secured for dental work and for throat examinations and treatment. It was recommended that the various buildings be connected by cement walks, the surveying and designing of these walks to be undertaken by the State Sanitary Engineer. It was recommended that the old truck, now four years old, be replaced with a new one. Other recommendations concerned the placing of new wire fencing where needed and the installation of certain electric wiring.

After completing his report Dr. Gambrell moved that the Board immediately authorize the changes embraced in his recommendations, and suggested that a committee be appointed to act with the Secretary and State Health Officer and the Superintendent of the Sanatorium in effecting the changes suggested.

Dr. Wm. Egleston offered an amendment to Dr. Gambrell's report, suggesting that a high-grade X-Ray outfit be purchased for the Sanatorium. This amendment was accepted and Dr. Gambrell's motion when put by the Chairman was carried without discussion.

The Acting Secretary read a copy of a letter of commendation addressed by the Secretary to Dr. E. Paul Knotts, Director of the Orangeburg County Health Department, which he was instructed

to write at the October 14th meeting of the Board. The Board approved the sentiments expressed.

At the direction of the Chairman, Dr. C. V. Akin outlined for the Board the programme of the South Carolina Public Institute to be held in Columbia, South Carolina, during the week of January 9th to 14th, 1922. The members of the Board were much impressed by the plan, and it was moved by Dr. E. A. Hines that the Board meet on January 9, 1922, the opening day of the Institute, for the express purpose of giving an official welcome to those attending the Institute. The motion, having been put by the Chairman, was carried without discussion.

The Acting Secretary read to the Board an application from Miss Lena Stevens, of Bennettsville, South Carolina, for the position of dietitian at the South Carolina Sanatorium. The applicant was highly recommended by Dr. Marsh. Dr. William Egleston moved that this application be referred to a committee to consist of Dr. Wm. M. Lester, member of the Board, Dr. Ernest Cooper, Superintendent of the Sanatorium, and Dr. James A. Hayne, State Health Officer, for consideration and action. This motion was carried without discussion.

A set of regulations directed at the prevention of the spread of venereal disease, prepared by the State Venereal Disease Officer, was presented by the Acting Secretary for the consideration of the Board. These regulations were drafted in accordance with Section 5, of Act 17, Acts of 1919, Statutes at Large 30, for the express purpose of simplifying and expediting the application of the State statute. After due consideration, the regulations were approved and adopted after a motion to that effect had been put by the Chairman.

Dr. E. A. Hines, after a brief preamble in which reference was made to the nearness of the holiday season, moved that the Board prepare a resolution expressing the commendation of the Board for the efficient service performed during the year 1921 by the Secretary and State Health Officer and the various department heads and subordinates. It was further suggested that a copy of this resolution be sent to each department head. This motion having been put by the Chairman, was carried without discussion.

Upon the request of Mr. S. J. Ashby, farmer and dairyman at South Carolina Sanatorium, the Chairman appointed a special committee, consisting of Dr. E. A. Hines and Dr. Robt.

A. Marsh, to give Mr. Ashby a hearing concerning his dismissal from service at the Sanatorium. Mr. Ashby made the point that if he were thrown out of employment this near the end of the year it would be extremely difficult for him to secure another place at once. The Committee was of the opinion that as the Superintendent, Dr. Cooper, had not made a statement to the Board concerning this case no definite action should be taken until both sides had been presented. The Chairman ruled that the matter should be left in the hands of the Secretary and appointed Dr. Wm. M. Lester to assist Dr. Hayne in investigating Mr. Ashby's case. This Committee was given the power to adjust the matter.

Just before the close of the meeting the following resolution was adopted:

Be it resolved by the Executive Committee of the South Carolina State Board of Health in regular session December 8, 1921:

That the Public Health Institute to be held in Columbia, S. C., during the week of January 9-14, 1922 by the South Carolina State Board of Health and the U. S. Public Health Service bear the full approval and endorsement of the Executive Committee of the State Board of Health as being a most practical and effective means of placing correct and scientific knowledge before the people of this State; and

Be it further resolved, that the Executive Committee manifest its approval and sanction of the effort being made by holding its next regular meeting in Columbia on January 9th, the opening day of the Institute.

There being no further business, the Board adjourned to meet on January 9, 1922.

Attest:

Acting Secretary.

REPORT OF COMMITTEE ON SANITARY INSPECTION OF STATE PENAL AND CHARITABLE INSTITUTIONS.

*To the Chairman and members of the Executive Committee,
South Carolina State Board of Health.*

Gentlemen: As a member of the committee appointed by your

Board to visit and make the annual sanitary inspection of the penal and charitable institutions of the State, I beg to say that I have today inspected the State Hospital and the South Carolina State Penitentiary.

At the hospital I was accompanied through the entire plant by the Superintendent, Dr. C. F. Williams, who took great pleasure in going into details and showing me everything—the good, better and the best features of the institution. There is nothing bad about the institution to report to you except it is to be regretted that the population out there is so great that they are of necessity very crowded, and especially are things congested in the ward for that has not been remodeled and modernized; the management doesn't think it best to do this remodeling until after the entire colored population has been moved to State Park, and just at this point I think our Board should strongly urge the Legislature, on account of the very crowded condition, necessarily making the sanitary condition very bad, to provide new quarters at State Park for all colored patients and move them into same as early as possible. Already there has been installed at State Park a fine water system for deep wells and the electric power plant will be completed out there within the next few days, and the only thing now necessary is the erection of the required buildings.

The old negro ward wall be badly needed soon for the very rapidly increasing population. The management informs me that every possible available space is now filled and that there is great fear in the minds of the Board of Regents that some of the numerous applicants for admission would have of necessity be kept in their respective county jails, on account of the lack of room in the hospital. Never in the history of the institution has it had so many inmates. Today there are 713 white women, 605 white men, 490 colored women and 591 colored men—a total of 2,399. Of this number 462 negroes are now at State Park.

Gentlemen, I do not feel that I can express to you in words the surprise and delight that I experienced today when I saw into the vitals of this wonderful institution of which every South Carolinian should feel so proud. No State has done more for its unfortunate citizenship than has our own. No hospital, private or public in South Carolina, keeps its wards cleaner or any more attractive than the State Hospital. This mass of people, though crazed and as pitiable as they are seem as one large and happy

family—all of them are cooperative with the management to keep the institution up to the high mark as it is. I saw the large dining room filled with wholesome and nutritious food, and this large family dining just as orderly as if they were at some educational institution. This order and decorum show to my mind the care and kindness of the management in training these unfortunates.

I was impresed with the large number of inmates who were at work or occupied in some way—at least one-half of them were doing something. Dr. Williams believes that occupation keeps them quiet and more contented and happier.

The kitchen and dining room are kept clean.

The dairy is modern and the supply of milk is of the very best.

The plumbing throughout the place is in perfect order. There is practically no sickness in the Hospital. Some very old and infirm are there who will soon pass out. At the T. B. pavillion for whites there are a good many patients; none are very sick but all are running temperatures. There is no provision, unfortunately, for the colored T. B. population. They have to be cared for on the porches of the ward.

In conclusion let me say that South Carolina has done herself proud through her representatives of her people in providing such an institution as our State Hospital. In comparison with other institutions of like nature that I have visited ours is truly a veritable Paradise, especially for our white people, and may we hope that ere another year that we can say as much has been done for our colored race.

The only possible criticism that I or anyone can make of the institution is the unsanitary condition of the negro ward, and this can not be remedied by any other means than to replace the present ward with a new one. I think that we should strongly urge our Legislature to give this very important matter their most earnest consideration.

Respectfully submitted,

ROBERT A. MARSH,

For Committee.

October 11th, 1921.

SANITARY INSPECTION OF CONFEDERATE SOLDIERS' HOME.

We visited this institution October 13, 1921. It is gratifying

to report a complete remodeling of the Home now nearing completion as result of an appropriation of \$35,000 for the purpose by the last General Assembly. A \$10,000 central heating plant is being installed, also modern baths and toilets. About twelve new rooms are being added. The Hospital has been enlarged.

The sanitary condition is necessarily not up to the standard, owing to the large force of workmen about the premises, but yet nothing deserving special criticism from a health standpoint was observed. The diet represents a well-balanced ration. We dined there and found the menu as follows: vegetable soup, sweet potatoes, turnip salad, boiled rice, boiled bacon, cornbread, peach pie and coffee.

There are 62 old soldiers there now and their general health is fairly good.

E. A. HINES, M. D.

SANITARY INSPECTION SOUTH CAROLINA REFORMATORY FOR NEGRO BOYS, LEXINGTON COUNTY.

We inspected this institution October 13, 1921. There are about 150 boys there. The Dormitory accommodations are greatly crowded. The boys sleep two in a single bed, which is decidedly undesirable. We noted a considerable number of flies in the dining room and kitchen.

Only about half dozen cases of minor disease were observed in the hospital.

E. A. HINES, M. D.

York, S. C., Nov. 9, 1921.

Mr. Chairman and Members of the State Board of Health, Columbia, S. C.

Gentlemen: Upon request of Dr. Marsh, chairman of the Penal Institutes Committee, I inspected the Industrial School for Boys at Florence, S. C., on the night of November 7th and the morning of the 8th, 1921.

I found the institute superintended by a comparatively new man, Mr. Martin. He is a young man, well educated, courteous and kind, and his heart is in his work. He is intensely interested

in everything pertaining to the institute, and is glad to receive suggestions for improvement when such can be intelligently offered. I think in the selection of Mr. Martin the State secured a most efficient man.

My inspection began the night of the 7th, after the close of the day and while the boys were asleep. About the first thing that struck my attention was two boys sleeping on the floor of a most unsanitary closet, without springs or mattress or blankets. The reason assigned for placing the two boys there was that they were bedwetters and that by this arrangement the other boys going to the closet could awake them during the night.

All the sinks in this closet were flushed by one large tank at the same time and at regular intervals. There are two toilets of this kind. They keep the floor wet, and one of them empties about half the flush on the floor. This toilet is adjoining the sleeping apartments of one company of boys; the door is left open and the odor in this end of the room is vile.

Most of the windows were closed, leaving the hall badly ventilated and also with air space totally inadequate for each boy. The mattresses were apparently filthy, unfit for use, and should be condemned. Nothing like enough blankets for winter months were on hand. Many beds had no sheets and those which were provided in this respect had only one, so when it was washed and damp it could not be used.

Few, if any, of the boys had nightshirts or pajamas; some were sleeping in their work clothes. Few had or used tooth brushes. Their clothing, except socks, was insufficient, poor and soiled. A good many of the boys had no shoes and consequently were bare-foot.

I was present at and inspected one meal, which I considered only fair. I do not think they receive a well-balanced diet. A large percent of them have red tongues and gums. Their health seemed to be excellent, with the exception of a few, who, only from appearances, I suspected of hook worms. They seemed to be contented and satisfied.

Some of the quarters were fairly well kept; others poorly so. There was much evidence of no care of the basements,—rags, papers, dirt, etc., being very conspicuous. The premises, except around the laundry, were fairly well policed. There was no evidence of sufficient milk and butter, or home grown vegetables in proper quantities.

The herd of cows habitually abort; the bull seems to be ineffective.

I suggest the following improvements:

As all the shower baths run at the same time, if only one boy is bathing, thereby wasting a great deal of water, I suggest that cutoffs be installed so that one shower bath can be taken at a time,

The fire protection seems very inadequate. This condition should be improved at once.

There should be a tank for each sink, thereby improving the sanitary condition of the two toilets previously mentioned and a great saving of water effected. That the toilets be kept closed, so that the order can be kept out of the sleeping quarters. That new mattresses be furnished, and sheets, comforts and blankets sufficient for each boy provided.

Under the present arrangement two or three boys have to use the same locker, which is unsatisfactory. Each boy should have a separate place for his own clothing. Each boy should be provided with a tooth brush and required to use it after each meal; also taught personal sanitation. They should keep the whole premises more sanitary by keeping them neat and clean. The practice of requiring the boys that are bedwetters to sleep on the floor of the closet should be discontinued. I would suggest that a few of the boys be examined for hookworm. In my opinion, all should be vaccinated against typhoid, then each new boy vaccinated when he enters the institute. All are vaccinated against small-pox and each new arrival vaccinated as he enters.

I noticed evidence of comparatively recent improvement in several departments, but not being familiar with conditions that prevailed before the present superintendent took charge, it was impossible for me to tell the exact extent of these improvements.

M. J. WALKER, M. D.

SANITARY INSPECTION OF WINTHROP COLLEGE ———, 1921

This Committee visited Winthrop College on ———. We were delighted to find the plant in such excellent condition. The State of South Carolina has every reason to be most proud of this college. We visited every department from the kitchen and cold storage departments to the abattoir, dairy and chicken farm. We found everything right up to date in the requirements

of modern sanitation. The dairy is a model dairy. We found the abattoir clean and sanitary. The chicken farm, we understand, furnishes nearly all of the eggs used by the student body.

The new dormitory for the girls has been completed and there we found everything that is conducive to the protection and health and comfort of the girls. The gymnasium is one of the best of the kind anywhere in the country.

We found nothing to criticize and could make no suggestions as to where improvements could be made, so far as sanitary conditions are concerned.

On account of illness in the families of different members of the Committee, we were unable to visit the other State Institutions of learning in the late fall.

Respectfully submitted,
WM. EGLESTON, M. D.

Chairman, Committee Sanitary Inspection State Schools and Colleges.

HYGIENIC LABORATORY REPORT.

*To the Chairman and Members of the Executive Committee,
South Carolina State Board of Health.*

Gentlemen: The laboratory is now in its thirteenth year so firmly established and so widely known as to its utilization by citizens of the State a matter of course, while its continued activities are indispensable to physicians and the public health work of the State. In addition to assisting physicians in diagnosis and management of their cases, the laboratory is available to any lay citizen of the State for work within its scope. Assistance is also extended to local Boards of Health and private laboratories whenever requested. The laboratory differs from corresponding institutions in all other states in making no charge for any services or materials used; hence its financial support is limited to the direct appropriation made by the legislature. The appropriation for the current year was exhausted at the end of nine months, at which time the quantity of work performed had equalled that done during twelve months of the preceding year. At the end

of eleven months the work had surpassed that of the entire previous year.

There have been no changes in the personnel of the laboratory during the year.

DIAGNOSTIC WORK.

A substantial increase in all lines of this work is to be noted. As in previous years, it is requested and urged that financial provision be made for the purchase and supplying of proper specimen containers. The advantages of such a system to all concerned need not be reviewed in this report. A study of the tabulated results of diagnostic tests leads to many interesting suggestions. Among others; since there were reported to the Vital Statistics Bureau three hundred and ten deaths from typhoid fever during the past ten months of the year, there were approximately thirty-one hundred cases of typhoid in the State during that period. The laboratory shows for the year twelve hundred positive tests for typhoid, out of a total of thirty-three hundred and seventy-four. This shows the statewide scope which our work has attained. The valuable assistance of these tests in aiding the Health Officer to find unreported cases is obvious. Again; while there have been this year two thousand two hundred and twenty-five more Wassermann tests than last year, there have been found this year one thousand and thirty-five fewer positives. The Wassermann work is about equally divided between the practising physicians and the V. D. Clinics, thus reaching all classes of citizens. That there has been marked success in the fight against syphilis in our State, is thus proved by these figures, for the laboratory is here the court of last resort.

PASTEUR TREATMENT.

This work continues to increase. During the year we have found two hundred and ninety-four animals rabid, out of a total of five hundred and thirty-five examined. This is only a portion of the rabid animals which were killed or died in the State.

Seven hundred and sixty-seven persons applied for treatment, so that our State can now claim the distinction of having at least two citizens bitten by mad dogs on every day of the year, holidays included.

There were no failures of immunization in this series. One

patient, a child of seven years, badly lacerated about the face, developed the disease twenty-two days after being bitten, in spite of immediate treatment of the wounds and Pasteur treatment begun on the day of the injury. Another case, a child, also bitten on the face, developed rabies eleven days after being bitten. As has been stated, cases with this short period of incubation do not permit of immunization by any method known at present.

TYPHOID VACCINE.

The largest amount of typhoid vaccine ever sent out in any one year is the record for 1921. Due partly to the praiseworthy work of several county health officers, and because of several local outbreaks of typhoid, calls for the vaccine began earlier than usual and continued frequent throughout the autumn.

During the year fifty-six thousand, eight hundred and seventy-one ampuls were supplied, which should indicate about twenty thousand persons immunized during the year.

Respectfully submitted,

F. A. COWARD, M. D.,

In Charge, Department of Laboratory.

SUMMARY OF LABORATORY WORK FOR THE YEAR 1921.

Kind of specimen for examination	Positive	Negative	Doubtful	Total
Typhoid	1,074	2,201	99	3,374
Widal Test:				
Paratyphoid	128	3,232	14	3,374
B. Tuberculosis:				
In Sputa	229	996		1,225
In other discharges	1	11		12
Rabies	294	197	44	535
B. diphtheria	167	485		652
B. coli in water	273	182		455
Plasmodium malariae	16	466		482
Blood Culture		1		1
Gonococcus (smears)	173	832		1,005
Cultures		9		9
Meningococcus (smears)		3		3
Intestinal Parasites:				
Hookworm	246	1,215		1,461
Endameba histolytica	2	12	1	15
Ascaris	15			15
Tenia nana	41			41
Specimens for identification:				
Pus smear	1			1
Pneumococcus	1			1
Cultures for typhoid	2	8		10
Smear for Vincent's Angina	2	2		4
	2,665	9,852	158	12,675

WASSERMANN TEST.

BLOOD:

Very Strongly Positive (++++)	3,088
Strongly Positive (+++)	348
Positive (++)	166
Weakly Positive (+)	534
Doubtful (+)	641
Negative (-)	14,153
Anticomplementary (AC)	590
	<hr/>
	19,520

SPINAL FLUID:

Very Strongly Positive (++++)	3
Strongly Positive (+++)	5
Positive (++)	5
Weakly Positive (+)	3
Doubtful (+)	3
Negative (-)	106
Anticomplementary (AC)	4
	<hr/>
	129

Total for Wasserman Test	19,649
SPECIMENS RECEIVED UNSUITABLE FOR EXAMINATION	843

PASTEUR TREATMENT.

Complete treatments, December 31st.	702
Under treatment December 31st.	38
Treatments discontinued by request of patients	27
	<hr/>
Total	767
Number of patients treated at home	721
Number of patients treated at laboratory	46
	<hr/>
	767
Location of bites:	
Face	25
Hand and foot	104
Leg and arm	51
Doubtful exposure	25
No information	560
Body	2
	<hr/>
	767

TYPHOID VACCINE.

Number of Ampoules sent out	56,871
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*The Chairman, and Members, The Executive Committee, S. C.
State Board of Health, Columbia, S. C.,*

Gentlemen: I have the honor to submit herewith a report of the work accomplished by the Division of Venereal Disease Control

of the South Carolina State Board of Health during the state fiscal year January 1, 1921 to December 31, 1921.

The ratio between the actual number of cases treated for 9 months and the number estimated for 12 months compared with the actual number treated in 11 months is so close as to warrant the adoption of the estimated figures as representative of actual conditions.

Owing to the large number of cases accumulating from month to month for the first half of the year—occasioned by the form of report used—the figures represented in this report have been deliberately deprecated by 33 1/3%, which is the average of the cases carried forward from month to month.

I believe that the figures submitted for your consideration are as exact as possible with a constantly shifting attendance.

Respectfully,

P. A. SURGEON,
State V. D. Officer.

DIVISION OF VENEREAL DISEASE CONTROL.

The activities of the Division of Venereal Disease Control of the South Carolina State Board of Health are divided under three main heads:

- (1) Administrative.
- (2) Educational.
- (3) Physical control of foci of venereal infection through:
 - (a) Medical treatment of venereally infected persons;
 - (b) Application of laws of the State of South Carolina and the Regulations of the State Board of Health in the control of persons who ignorantly, wilfully or maliciously subject others to infection through their conduct or mode of living.

Administrative:

The administration of the Division of Venereal Disease Control is under the immediate supervision of a State Venereal Disease Officer, subject to the orders of the Executive Committee of the State Board of Health through the State Health Officer.

The State Venereal Disease Officer is assisted by one clerk

who serves as clerk, stenographer, bookkeeper, and accountant for the administrative section and for the several venereal clinics operated in the State.

The services of a legal adviser have been retained also, a monthly salary of \$100.00 being authorized by the Executive Committee and provided by the General Assembly.

An office is maintained in the Palmetto Building in Columbia, S. C., at an annual expense of \$350.00 for office and telephone rent, and not to exceed \$200.00 for office supplies and equipment.

The total expenses of administration do not exceed \$6,300.00 per annum, which represents about 10% of the total amount expended in the conduct of the work.

The duties of the State Venereal Disease Officer are numerous and varied in nature but in general he is charged with securing financial, legal, and moral support for the clinics under his supervision; supervising the operation and maintenance of venereal disease clinics; supervising the expenses incurred in the clinic work and settling for same through the channels provided; the selection and employment of clinic personnel; the arbitration of disputes arising between clinic personnel and local agencies and authorities; the preparation and distribution of educational and informative matter relating to the subjects of venereal diseases and their control; and giving lectures and talks on these subjects.

Educational:

The educational measures approved by the Executive Committee of the State Board of Health and undertaken by the Division of Venereal Disease Control are:

(1) The use of lantern slides illustrating lectures on physical fitness. A section of these is especially directed at the public health significance of venereal diseases.

(2) The use of poster card exhibits, three sets of which are provided, one for boys of high-school age; one for girls and young women; and one for adults and the general public.

(3) The special and general distribution of educational leaflets, pamphlets, and booklets on the subject of venereal diseases, designed for the consumption of selected groups. Several sets of these have been adopted, among which are as follows:

- Set A. For young men, "Manpower."
- Set B. For general public.
- Set C. For boys, "Physical Fitness or Keeping Fit."
- Set D. For parents, "The Parents' Part."
- Set E. For girls, "Healthy, Happy Womanhood."
- Set F. For educators, "Sex Education in Schools."

Other Pamphlets:

- Sex Education in the Home.
- Information Concerning Venereal Diseases.
- Instructions for Persons Suffering with Syphilis.
- Instructions for Persons Suffering with Gonorrhoea.
- Map Showing Location of Venereal Disease Clinics.

(4) Lectures and talks to selected groups.

(5) Of far reaching importance is the cooperative effort on the part of the State Young Men's Christian Association in undertaking a special "Keeping-Fit" program with the older boys of the Y. M. C. A.

At the third Annual meeting of the Older Boys Conference of the Y. M. C. A., held in Columbia December 2, 3, & 4 The State V. D. Officer addressed a gathering of nearly 400 representatives from 63 South Carolina Communities. The subject of the lecture was "Something More in Physical Fitness" and the responsibility of the young man to himself, to the community, and to future generations was outlined specifically with reference to hereditary influences as modified by venereal infections.

PHYSICAL CONTROL OF INFECTION THROUGH MEDICAL TREATMENT.

On January 1, 1921, there were in South Carolina nine major clinics where venereal diseased persons were given treatment without cost to themselves. These clinics are located in the larger cities of the State, the location being with special reference to the concentration of population, the clinics being fairly equidistant from each other. A graphic chart showing these clinics is attached.

Owing to a lack of State funds, and failure on the part of City and County to make financial provision for the continuation of the work, the Charleston clinic was closed on June 30, 1921. To date this is the only clinic closed in the State since the beginning of the work in 1918.

For two months after the closing of the clinic at Charleston a limited amount of work was accomplished through the co-operation of a local physician.

Throughout the existence of the Charleston Clinic constant assistance was given by the South Carolina Medical College through its teaching staff and by the Roper Hospital, which donated quarters, some nursing assistance, and light, heat, gas, and miscellaneous supplies. By this generous help the clinic was kept open for at least a year after its closure would have been forced under ordinary circumstances. At no time during its existence did the City or County of Charleston contribute in any way to its support. This in spite of the fact that several thousands of indigent citizens of the City and County received free treatment.

With no other exception the eight remaining clinics have received adequate support from local agencies.

In addition to financial backing by City and County Governments several clinics have received aid from private subscriptions of money, supplies and equipment.

An analytical report showing the expenses of clinic operation, together with a tabulation of cases of syphilis, gonorrhoea, and chancroidal infections treated is attached. This tabulation speaks for itself but indicates two points of great significance and general interest:

(1) There is a general gratifying response on the part of citizens of this State to the effort being made to control the spread of venereal infections through medical treatment;

(2) Through a well organized and carefully operated clinic a large number of venereally affected persons can be economically treated at public expense.

It would be a waste of time to include a defense of the clinic "idea" in this summary. It is granted generally that public health centers and clinics serve a distinct and beneficial purpose in the control of communicable diseases through educating the public, as a demonstration of the practicability of group treatment, and through the specific control of disease through the elimination of foci of infection as represented by the ambulant case of disease.

The worth of the South Carolina Venereal Disease Clinics depends upon two factors:

(1) The number of persons attending, this attendance resulting directly in the dissemination of correct information and in the clearing up of foci of disease.

(2) The accuracy of diagnostic and treatment methods applied.

The Venereal Clinics have performed a distinct service in providing skilled professional services and adequate treatment to a large number of persons who through financial indigency, a distance from medical centers, ignorance of the disease from which they suffered, and lack of trained practitioners, would otherwise have been unable to secure treatment.

The economic aspect of the group treatment of venereal diseases is second in importance only to the hygienic significance of the work. A public health measure is worth while in proportion to the amount and directness of the return to the public which pays for it, whether the return be expressed in terms of money saved or of increased productiveness. A most skeptical consideration of the facts warrants the conclusion that the South Carolina Venereal Disease Clinics are worth what they cost.

Additional Requirements:

Two needs stand out in a survey of the work of the Division of Venereal Disease Control:

(1) *Additional Clinics.* Two new clinics can be inaugurated in South Carolina with the beginning of the year 1922 of the General Assembly permits. All plans have been formed and local interest and support is assured.

(2) *Additional Provisions for Education.* The only requirement for this work is more money. An adequate corps of trained workers is available and educational material is plentiful. We shall need a moderate amount of money in order to put these workers in the field and to supply them with the requisite materials for their work.

ANALYSIS OF WORK DONE IN STATE CLINICS WITH FINANCIAL SUMMARY.

Cases Treated in Nine Venereal Clinics During 1921.

Syphilis, male and female.....	16,550
Gonorrhoea, male and female.....	13,916
Chancroid, male and female.....	1,251
Total cases of venereal disease treated	31,717

Total expense of work, including administration, operation and maintenance of clinics, and cost of medical and surgical supplies and equipment	\$64,170 70
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A comparison of the figures showing cases treated and the cost of the work indicates a per capita cost of.....	2 02
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Estimated Value of Work Performed at Lowest Professional Rates.

16,550 cases syphilis at \$100.00 per case.....	\$1,655,000 00
13,916 cases gonorrhoea at \$25.00 per case.....	347,900 00
1,251 cases chancroid at \$25.00 per case.....	31,270 00

Total estimated value of work done.....	\$2,034,170 00
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NOTE: It is impossible to state the value of this work in terms of disease prevention and in the saving of life, and the increased productiveness of the individuals benefited.

Respectfully submitted,

C. V. AKIN,

P. A. SURGEON, U. S. P. H. S.,

* State Venereal Disease Officer.

FINANCIAL SUMMARY OF DIVISION OF VENEREAL DISEASES, SOUTH CAROLINA STATE BOARD OF HEALTH, 1921.

Assets.

State appropriation for 1921.....	\$33,886 00
Brought forward from 1920 (government, etc.).....	8,627 00
Government appropriation for 1921.....	9,001 97
Refund for salary incorrectly paid.....	150 00

Outside funds other than government:

City of Florence.....	333 32
City of Greenville.....	2,000 01
County of Orangeburg	166 66
County of Spartanburg.....	1,500 00
City of Columbia.....	1,000 00
County of Richland.....	1,500 00
City of Anderson.....	2,225 00

Total assets to date paid into State treasury and spent direct.....	60,415 75
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Debits.

To personnel, operation and maintenance of nine venereal disease clinics, minimum estimated expenses	55,022 70
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Expenses of administration, including salary and transportation of director	2,700 00
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Salary and transportation of director.....	2,700 00
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Salary clerk, stenographer, bookkeeper.....	1,750 00
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Salary legal consultant and adviser.....	1,200 00
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Expenses of all sorts incurred in miscellaneous maintenance and operation of all clinics not charged in clinic accounts above..	3,500 00
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Total debits (low estimate).....	64,170 70
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Exact budget estimate.....	64,156 21
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Receipts in excess of above listed.....	9,750 00
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Balance assets over debits.....	5,995 03
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BUREAU OF VITAL STATISTICS.

Columbia, S. C., December 5, 1921.

Dr. J. Adams Hayne, Secretary, State Board of Health, Columbia, S. C.

My Dear Doctor: Enclosed please find my report for ten months ending October 31st.

There is still room for improvement and I hope to do better next year.

Very truly yours,

C. W. MILLER,
Assistant State Registrar.

TOTAL NUMBER OF BIRTHS AND DEATHS IN SOUTH CAROLINA FROM
JANUARY 1st TO OCTOBER 31, 1920.

County.	Deaths.	Births.	S. Births.
Abbeville	280	620	29
Aiken	489	849	61
Allendale	155	323	32
Anderson	737	1,860	87
Bamberg	247	498	37
Barnwell	167	352	23
Beaufort	364	483	63
Berkeley	375	576	51
Calhoun	272	527	45
Charleston	1,893	1,778	248
Cherokee	300	746	24
Chester	271	642	26
Chesterfield	308	899	43
Clarendon	436	919	52
Colleton	181	477	35
Darlington	483	1,028	66
Dillon	208	513	30
Dorchester	187	283	14
Edgefield	212	500	21
Fairfield	277	573	27
Florence	776	1,306	106
Georgetown	378	461	34
Greenville	1,044	2,008	119
Greenwood	351	755	47
Hampton	283	440	37
Horry	328	965	58
Jasper	121	175	8
Kershaw	259	672	18
Lancaster	281	704	27
Laurens	458	1,017	52
Lee	268	606	42
Lexington	370	809	40
Marion	166	511	30
Marlboro	465	984	68
McCormick	151	289	25
Newberry	348	814	51
Oconee	313	775	25

Counties	Deaths.	Births.	S. Births.
Orangeburg	893	1,801	127
Pickens	242	853	31
Richland	1,373	1,680	126
Saluda	171	271	16
Spartanburg	1,009	2,111	120
Sumter	545	1,152	88
Union	215	620	20
Williamsburg	422	930	52
York	544	957	54
Total	19,616	38,112	2,436
Yearly rate based on deaths for ten months.....			14.
Yearly rate based on births for ten months.....			27.2

TOTAL NUMBER OF BIRTHS AND DEATHS IN SOUTH CAROLINA FROM
JANUARY 1st TO OCTOBER 31, 1921.

Counties.	Deaths.	Births.	S. Births.
Abbeville	207	669	25
Aiken	379	878	50
Allendale	117	323	28
Anderson	641	1,948	81
Bamberg	221	548	47
Barnwell	152	335	17
Beaufort	324	492	55
Berkeley	284	673	36
Calhoun	194	533	43
Charleston	1,670	2,350	283
Cherokee	237	712	32
Chester	271	608	26
Chesterfield	297	835	34
Clarendon	299	916	62
Colleton	159	521	26
Darlington	468	1,029	64
Dillon	238	607	29
Dorchester	143	325	25
Edgefield	160	462	24
Fairfield	201	675	20
Florence	626	1,387	104
Georgetown	276	611	38
Greenville	946	2,260	85
Greenwood	316	767	27
Hampton	194	446	32
Horry	319	1,053	55
Jasper	102	224	18
Kershaw	188	593	16
Lancaster	255	685	28
Laurens	399	949	44
Lee	239	638	42
Lexington	293	781	26
Marion	198	514	28
Marlboro	373	916	57
McCormick	111	318	24
Newberry	314	924	40
Oconee	203	757	29
Orangeburg	621	1,727	138
Pickens	206	823	43
Richland	1,286	1,740	83
Saluda	113	321	13
Spartanburg	818	2,088	113

Sumter	543	1,153	82
Union	198	633	15
Williamsburg	282	860	43
York	475	1,028	70
	<hr/> 16,556	<hr/> 39,635	<hr/> 2,300
Death rate per thousand.....			11.8
Birth rate per thousand.....			28.3

DEATHS FROM PELLAGRA IN THE FOLLOWING COUNTIES FOR TEN
MONTHS ENDING OCTOBER 31, 1920 and 1921.

Counties.	1920.	1921.
Abbeville	2	3
Alken	3	3
Allendale	2	1
Anderson	17	10
Bamberg	1	2
Barnwell	1	1
Beaufort	2	..
Berkeley .....	..	..
Calhoun .....	..	4
Charleston	30	33
Cherokee	1	0
Chester	7	9
Chesterfield	1	1
Clarendon	4	1
Colleton	1	..
Darlington	4	4
Dillon .....	..	3
Dorchester	3	3
Edgefield	3	1
Fairfield	5	7
Florence	5	7
Georgetown	3	6
Greenville	8	9
Greenwood	10	5
Hampton	1	1
Horry .....	..	2
Jasper .....	..	..
Kershaw	1	2
Lancaster	2	7
Laurens	4	6
Lee	1	5
Lexington	9	7
Marion .....	..	2
Marlboro	2	3
McCormick	4	2
Newberry .....	..	8
Oconee	1	2
Orangeburg	7	6
Pickens	3	3
Richland	38	57
Saluda	1	..
Spartanburg	14	8
Sumter	6	5
Union	3	2
Williamsburg	3	1
York	6	8
Total	<hr/> 219	<hr/> 260

	For 1921.
Whites	75
Negroes	185
Total	260
White rate per 1000,000.....	11.
Negro rate per 100,000.....	25.6

BIRTHS IN SOUTH CAROLINA ACCORDING TO RACE AND SEX FOR NINE MONTHS ENDING SEPTEMBER 30, 1920 and 1921.

1920.			
White.		Black.	
Male	8,374	Male	8,878
Female	7,915	Female	8,666
Total	16,289	Total	17,544
Unknown			42

1921.			
White.		Black.	
Male	8,788	Male	9,155
Female	8,548	Female	8,791
Total	17,336	Total	17,946
Unknown			57
Indian			1

DEATHS IN SOUTH CAROLINA, ACCORDING TO RACE AND AGE FOR THE TEN MONTHS ENDING OCTOBER 31, 1920 and 1921.

	White Male 1920	White Male 1921	Black Male 1920	Black Male 1921
Under 1 year.....	918	804	1,599	1,383
1 to 5 years.....	409	334	597	424
5 to 10 years	86	80	182	128
10 to 20 years.....	201	180	376	263
20 to 30 years.....	294	230	639	500
30 to 40 years	335	181	475	373
40 to 50 years	293	260	454	445
50 to 60 years	316	296	458	355
60 to 70 years	517	503	442	325
70 to 80 years	465	430	372	331
Over 80 years	148	164	247	197
Unknown	12	22	24	32
Totals	3,994	3,484	5,865	4,756

	White Female 1920	White Female 1921	Black Female 1920	Black Female 1921
Under 1 year.....	676	614	1,363	1,179
1 to 5 years.....	348	296	516	421
5 to 10 years	78	70	192	135
10 to 20 years.....	165	123	528	425
20 to 30 years.....	354	258	886	751
30 to 40 years.....	389	232	709	584
40 to 50 years	254	212	551	502
50 to 60 years	242	212	368	330

	White Female 1920	White Female 1921	Black Female 1920	Black Female 1921
60 to 70 years	454	383	355	317
70 to 80 years	439	441	287	281
Over 80 years	289	265	272	244
Unknown	14	14	25	24
Totals	3,702	3,120	6,052	5,193
Indian			1920 3	1921 3

DEATHS FROM PARTURITION AND PREGNANCY FROM JANUARY 1ST TO
OCTOBER 31ST, 1920 AND 1921.

1920.		
Attended by physicians		356
Unattended by physicians		58
		414
1921.		
Attended by physicians		325
Unattended by physicians		33
		358

TOTAL NUMBER OF DEATHS FROM THE FOLLOWING DISEASES FROM
JANUARY 1ST TO OCTOBER 31, 1920 AND 1921.

	1920.		1921.	
	Number.	Rate per 100,000.	Number.	Rate per 100,000.
Tuberculosis, pulmonalis	1,242	88.5	1,172	83.6
Tuberculosis, other forms	95	6.9	98	7.
Pellagra	219	15.6	260	18.5
Diphtheria	97	6.8	117	8.3
Scarlet fever	6	.43	4	.28
Measles	13	.92	19	1.3
Typhoid fever	262	18.7	310	22.1
Smallpox .....	.....	....	8	.57
Cancer and malignant tumors	400	28.5	443	31.6
Malaria	215	15.3	176	12.5
Meningitis, cerebro spinal	30	2.2	29	2.1
Whooping cough	122	8.7	82	5.8
Pneumonia	1,526	108.8	610	43.5
Pneumonia, broncho	874	62.3	431	30.7
Pneumonia, hypostatic	13	.92	9	.64
Pleurisy	14	.99	18	1.3
Diseases of circulation	2,338	166.6	2,289	163.1
Diseases of kidney	1,247	88.9	1,196	85.2
Syphilis	51	3.6	62	4.4
Syphilis, congenital	51	3.6	44	3.1
Tetanus	14	.99	9	.64
Tetanus, neonatorum	26	1.8	18	1.3
Dysentery	252	17.9	155	11.
Dysentery, amebic	5	.35	9	.64
Scurvy .....	.....	....	.....	....
Intestinal diseases	1,059	75.5	1,039	74.1
Erysipelas	15	1.04	10	.71
Homicide	187	13.3	239	1.7
Suicide	37	2.6	57	4.1
Auto accidents	67	4.8	48	3.4

	1920.		1921.	
	Number.	Rate per 100,000.	Number.	Rate per 100,000.
Railroad accidents	50	3.5	44	3.1
General accidents	212	15.1	245	17.5
Lightning	14	.99	24	1.7
Legal electrocutions .....	....	....	5	.36
Poliomyelitis	7	.5	13	.92
Influenza and la grippe.....	653	46.5	91	6.5
Encephalitis, lethargic	20	1.4	23	1.6

COMPARATIVE STATEMENT OF DEATHS IN THE FOLLOWING CITIES FOR
1920 AND 1921, FOR TEN MONTHS ENDING OCTOBER 31ST.

	1920. Number.	1921. Number.
Abbeville	64	47
Aiken	95	61
Anderson	208	176
Bennettsville	44	38
Camden	41	35
Charleston	1,368	1,218
Cheraw	43	38
Chester	96	83
Clinton	69	54
Columbia	1,085	1,044
Darlington	54	58
Easley	50	42
Florence	303	215
Gaffney	101	87
Georgetown	103	74
Greenville	288	278
Greenwood	107	101
Laurens	69	64
Newberry	66	57
Orangeburg	118	90
Rock Hill	114	105
Spartanburg	306	296
Sumter	148	145
Union	66	59
Total	5,006	4,465

THE BUREAU OF CHILD HYGIENE AND PUBLIC
HEALTH NURSING.

I. ADMINISTRATION.

PERSONNEL.

Director, Mrs. Ruth A. Dodd, (paid by State, supplemented by Metropolitan Life Insurance Company).

District Supervisor, Miss Malinda McC. Murphy, (paid by State).

District Supervisor, Miss Helen B. Fenton (paid by Southern Division A. R. C.).

Colored Field Nurse, Ellen Woods Carter, (paid by Mission Board M. E. Church, South).

Secretary, Miss Mary McMillan, (paid by State, supplemented by Southern Division, A. R. C.).

The work of the Secretary consists of routine office work, correspondence, mailing out of literature, exhibits and nursing supplies, copying of reports and manuscripts and checking up of accounts.

Nursing Programs:

Concentrated effort has been given to the development of nursing programs and the stimulation of activities among nurses.

Early in the year an infant welfare program was prepared. This program embraced a survey which would add expectant mothers, new babies, bottle-fed babies and sick babies to nurses' visiting lists; home visitation; baby health conferences; lectures to groups of mothers.

A plan for the conduct of corrective school hygiene clinics, following medical examination of school children, was outlined.

A detailed program for a tuberculosis survey and local tuberculosis clinics was developed and mailed each nurse early in the summer.

Suggestions for a Health Program were published by the Bureau for the use of Club Women, the details of this program being worked out by a Health Council appointed by the Federation of Women's Clubs.

Supervision of Nursing Activities:

In June Tuberculosis funds were exhausted and it was necessary to discontinue the services of one district supervisor. The State was then redistricted and the territory equally divided between the two remaining supervisors, Miss Murphy and Miss Fenton.

In July a change of Secretaries and arrangements for vacation of director and one supervisor rendered it imperative to employ temporarily an assistant nurse, Miss Janet Campbell, whose duty is was to assist with administration and field work, initiate the new secretary in her duties, keep statistical records, develop educational programs and take charge of fair exhibits. This emergency past, Miss Campbell's services were discontinued November 28th.

The district supervisors have visited local nurses frequently.

An effort was made to demonstrate that the purpose of this supervision is not to criticise, but rather to assist in the development of nursing programs; to instruct in the use of record forms; to give advice in the solution of perplexing problems; to encourage the nurse to use her own initiative in the handling of local situations. As a result of this policy, the individual nurse has been strengthened; unity of purpose and concerted action has been made possible; uniform and accurate reports have been rendered. These reports are valuable for statistical records.

The supervisors have gone out into the field and worked with local nurses, going into the homes with them, assisting with baby conferences, corrective clinics, tuberculosis clinics, and Fair exhibits. A large portion of their time has been consumed in this phase of the work.

Nurses welcome this type of supervision, and supervisors have more requests than they can answer in person. When a personal visit is not possible, the request is answered with advice and helpful literature from the office.

The Director and two supervisors act in an advisory capacity to any agency in the State desirous of developing child welfare and public health nursing services. These workers are available and subject to call at any time for advice as to organization, for lectures, health exhibits and demonstrations. Many communities not supporting nursing services have been reached through lectures, exhibit material and literature supplied by the administration staff. Many demonstrations of school inspection, weighing and measuring of pre-school children and baby conferences have been given in these uncovered sections of the State.

Work Among the Negro:

After a leave of absence of four months, the colored field nurse, Ellen Woods Carter, returned to service February 8th. She was located in Florence County, where she worked in the colored schools, inspecting 936 pupils. This was followed with a tonsil and adenoid clinic which was conducted by the local doctors. Baby conferences were held. No midwifery classes were organized here as this work had been done by the city nurse.

She was then loaned to the Inter-Racial Commission to assist with their clean-up campaign.

In July she was transferred to Sumter where she worked under the auspices of the Mission Board of the M. E. Church, this Board in August assuming the entire responsibility of her salary. Here her work consisted of a demonstration of public health nursing activities with the hope of organizing the colored people to support a nurse of their own. The work resulted in the organization of a nursing committee that is now endeavoring to secure funds to employ a nurse. While here, in addition to her home visiting work she taught two classes in Home Nursing and 31 women received Red Cross certificates from this course.

She is now located in Marion under the auspices of the local Mission Board, where she is organizing Home Nursing and Midwifery classees.

She has delivered 198 lectures with an attendance of 13,153.

Educational Literature:

Bulletins issued by the Bureau are as follows:

Summer Diarrhoea of Infants.

Suggestions Along Food Lines for Young Children.

Nursing Series Booklets:

No. 1, The Public Health Nurse. What is she and what does she do?

No. 2, Half Day Spent with a Rural Public Health Nurse.

No. 3, The Baby Campaign of 1921.

No. 4, An Open Air Class.

No. 5, The Public Health Nurse and School Hygiene—Examination of School Children.

No. 6, The Public Health Nurse and School Hygiene—The Clinic.

No. 7, The Public Health Nurse and Tuberculosis.

No. 8, How to Organize and Maintain a Public Health Nursing Service.

Publications of the Federal Children's Bureau, the Metropolitan Life Insurance Company and others have been kept in the office for distribution.

A nurses' library and the pamphlet library of the N. O. P. H. N. have been in circulation among the nurses. The Vanta Library for mothers is circulated from this office.

Exhibits:

Exhibits were shown at Palmafesta, the State Fair, the Tri-County Fair at Andrews and many of the County Fairs.

Co-Operating Agencies:

American Red Cross, State Tuberculosis Association, Metropolitan Life Insurance Company, Federation of Women's Clubs, League of Women Voters, State Sunday School Association, Mission Board M. E. Church, South; South Carolina Better Baby Association, W. C. T. U. Association, School Improvement Association, Home Demonstration Department, Mental Hygiene Commission, Women's Legislative Council, Child Placing Department, Local School Boards, and Chambers of Commerce.

II. FIELD WORK.

NURSING SERVICES.

The number of nurses has varied from 38 to 42. At the present we have a staff of 42. These nurses are being supported by various agencies. County appropriations have been made in 11 counties. Local Red Cross chapters contribute to the support of 16 nurses. Seven are employed by Cotton Mills. Other agencies rendering financial support are Metropolitan Life Insurance Company, Tuberculosis Committees, Chambers of Commerce, and Women's Clubs.

With 38 nurses in the field at the beginning of the year, very little attempt was made to extend the organization.

The new organizations that are worthy of mention are Public Health Nursing Association of Beaufort County, Public Health Nursing Association of Kershaw County, Public Health Nursing Association of Columbia, Colored Nursing Committee of Sumter, under the auspices of the Mission Board M. E. Church.

Activities:

Nurses in the field have rendered besides care to the sick (see Nursing Series No. 2); they have waged a baby campaign (see Nursing Series No. 3); they have instructed classees of midwives (see Nursing Series No. 4); they have conducted physical inspection of school children (see Nursing Series No. 5); they have promoted corrective school hygiene clinics (see Nursing Series No. 6); they have conducted tuberculosis surveys and free tuberculosis clinics (see Nursing Series No. 7).

SUMMARY OF FIELD WORK FOR THE YEAR ENDING NOVEMBER 30, 1921.

Visits.

Total number of visits.....	37,007
Nursing	11,182
Instructive	12,318
School	2,156
Social Service	4,098
Conferences	5,938
Sanitation inspection	1,315

Specimens Collected.

Urine	193
Feces	886
Sputum	118

Medical Inspections.

Schools inspected	444
Pupils inspected	29,360
Pre-School age inspected	1,588
Total number inspected*.....	30,948
Defectives	14,877
Total defects	25,788
Defective eyes	2,682
Defective ears	1,003
Defective nose and throat	8,034
Defective teeth	11,159
Miscellaneous	2,910

Tuberculosis.

Home visits to diagnosed cases	1,255
Home visits to suspects	457
Total visits	1,656
Cases sent to sanatorium	44
Clinics held	61
Attendance	732

*Of this number 10,135 were examined by health officers, assisted by nurses.

Cases treated at clinic	479
Examinations secured by nurses	524
Cases found positive	121

Infant Welfare.

Prenatal visits	1,355
Postnatal visits	1,516
Visits to infants under 2 years	5,843
Baby conferences	249
Babies examined at conferences	4,007

Educational.

Talks to school children	1,018
Attendance	34,496
Talks to public meetings	368
Attendance	31,336
Home nursing classes	377
Attendance	2,384
Midwives enrolled	473
Classes held	252
Exhibits held	97
Literature distributed	28,058

Corrections and Treatments.

Dental treatments	927
Eye treatments	147
Eye corrections	166
Throat treatments	113
T. and A. operations	516
Vaccinations	1,792
Anti-Typhoid treatments	8,375
Other treatments	635
Treatments in clinics	431

Classification of Patients.

New cases during the year	4,399
Prenatal	421
Postnatal	338
Infants under 2 years	628

Tuberculosis	669
Typhoid	104
Other com. diseases	616
Surgical	554
Medical	1,069
Patients discharged	5,378
Recovered	4,007
Improved	615
To hospital	150
Dead	333
To other care	273

REPORT OF DEPARTMENT OF RURAL SANITATION AND COUNTY HEALTH WORK.

*To the Chairman and Members of the Executive Committee,
South Carolina State Board of Health.*

Gentlemen: I herewith submit a narrative and statistical report of work done by the Department of Rural Sanitation and County Health Work during the year 1921:

The Department of Rural Sanitation and County Health Work was severely crippled this year by having its appropriation reduced two-thirds. With the sum of \$10,000 it was impossible to give financial assistance to seven counties and run the administration office. A conference was held with the County Health Officers as to the advisability of discontinuing our Departments or running them on a very reduced scale. We then went to New York, consulted the International Health Board, and arranged to get their promised appropriation with the understanding that they would materially cut their appropriation for 1922.

The work in Lee County was discontinued at the end of the first quarter, after their county appropriation was exhausted, and Orangeburg County received assistance in a small way for two months longer and was then put on its own resources. In this way we have been able to run our Departments during the year. Darlington County will run its own Department without assistance from the State in 1922 and new counties will be added. We have three new counties which are preparing to ask us to assist them in perfecting a County Health Department.

Each County Health Officer is working full time in his county,

but is given a number of counties without Health Departments which he is to assist during the year in some way, if called on.

We are offering a limited sum of money and the personal supervision and direction of the State Director to any county which will organize a County Health Department. We propose to help finance these counties for a few years, until the work establishes itself, and then expect the county to make full appropriation. In this way we hope, eventually, to establish a County Health Department in every county, with trained experienced personnel under State supervision. The International Health Board has appropriated \$15,000 for 1922 only on the understanding that the State give a similar amount. Should the State fail to appropriate the full amount asked for we would be compelled to discontinue our work in the counties receiving financial assistance.

We are able to show a marked decrease in total deaths, and deaths from preventable diseases, in every county where we have worked two years. Some figures are given below, compared for a few counties with the State at large. Space forbids us from giving figures for each county.

We would like to urge on the members of the State Board of Health the importance of securing full appropriation asked 1922, and ask the individual support of each member of the Board.

We have an unusually fine personnel and are doing a greater and better amount of work on the smallest appropriation of any Southern State.

Educational:

While the entire work of the Department is more or less educational, we have grouped under this heading some specific work of note.

We had no money with which to run our Moving Picture Unit this year, but believing this work too valuable to allow the equipment to remain idle, we managed to finance this Department by advertisements and personal contributions. During the summer months we visited eleven counties: Darlington, Lexington, Saluda, Edgefield, McCormick, Abbeville, Greenwood, Anderson, Oconee, Pickens, and Spartanburg. We held 87 meetings at which these moving pictures on Health Education were shown to a total attendance of 18,250 people.

In Oconee alone, as a result of the film on Tuberculosis in Cattle, 500 cows have been tuberculin tested. In this work we had the cooperation of Farm and Home Demonstration Agents. When the county had no agent we had the co-operation of the County Superintendent of Education and in one county the members of the County Medical Association made talks for us.

Our County Health Officers and Nurses have given 511 lectures to 40,537 people and have made 255 talks to school children. 19,601 homes have been personally visited and 13,257 letters have been mailed. From the Director's office alone, during the month of November, we sent out 748 personal letters. Twenty-seven county newspapers have published, once each month, an article on Disease Prevention sent out from our office. Exhibits have been given at three County Fairs, health plays given in a dozen or more communities, literature and newspaper articles published. Other strictly educational work is recorded in the Statistical Report.

Sanitation:

On account of small appropriations three of our counties have had Inspectors for only part time, however, 1,441 homes have been sanitated during the year, and 994 homes have been screened. Clean-up campaigns have been carried on in towns and communities. Swimming pools and ponds have been inspected. In the towns a number of meat markets and slaughter pens have been inspected and made sanitary. Jails, convict camps, and county poor farms have been visited, and in counties where there is no Inspector this work has been done by the Health Officer.

CONTAGIOUS AND INFECTIOUS DISEASES.

Tuberculosis:

An effort has been made to discover the cases of active tuberculosis in the counties, and to get cases in the early stages committed to institutions. The advanced cases are visited and given instruction in the proper care to prevent the spread of the disease. The families of these patients are also instructed in precautionary measures and proper care of the sick. Screened sleeping porches are built under the instruction of the Inspectors and the patients isolated.

A tuberculosis clinic has been held in each county for both

colored and white. All who are known to have been in intimate contact with tuberculosis patients are urged to attend these clinics and all others are invited to come and submit to a thorough physical examination. In this matter each Health Officer had the co-operation of the County Medical Society, and in most of the clinics had the assistance of one other visiting Health Officer and Dr. Ernest Cooper, Supt. of the State Sanatorium, who examined all doubtful cases. We believe these free clinics will do much to enlighten the people as to the cause and prevention of disease. 77 cases of tuberculosis have been investigated during the year and these homes have been visited and instructed. 419 persons have been examined at the clinics. A number have visited the clinics and received instruction. Several thousand cattle have been tuberculin tested, through the co-operation of the County Farm Agents and veterinarians.

Smallpox:

For a number of years we have had very few cases of this disease and the compulsory vaccination school law has not been observed. As a consequence smallpox has been prevalent throughout the State in a more or less epidemic form. When these cases have been discovered we have forced those exposed to be vaccinated, and we are vaccinating all school children. Our health officers have vaccinated 31,039 persons during the year and for the past two years we have vaccinated 53,080 people. The schools are being visited this year and all cases where vaccinations were unsuccessful are being re-vaccinated. We are meeting with the co-operation of teachers and trustees in this work.

Typhoid:

One hundred nineteen cases of typhoid have been investigated during the year and the members of the family and other contacts urged to take anti-typhoid inoculations. The counties were divided into districts and free dispensaries were established in each district where anti-typhoid inoculations were given free. These clinics were given wide publicity through the county newspapers and as a result 12,903 inoculations were given. Less than a hundred people failed to take all three treatments and more than 4,000 were rendered immune to this disease.

Hookworm:

The first three months of the year we employed a microscopist

to examine specimens from all the counties for hookworm. After our appropriation was reduced we were unable to pay the worker and have made no extensive campaign in the treatment of this disease. The majority of the school children have been examined and treated; 1855 have been examined for this disease during the year, 334 found infected and 145 treated. We have supplied specimen boxes and treatment for a number of schools throughout the State which we have no accurate record of and they are not recorded in our report.

Venereal Disease Control:

When cases of venereal disease are discovered they are taken to the venereal clinics or sent to a local physician for treatment. A number of cases of syphilis have been discovered among the indigent at the County Homes, and the Health Officer and nurse have assisted in the treatment of many of these chronic cases. 54 cases have been referred to the free clinic and eight to local physicians. The midwives in the county have been required to register, and sterile ampouls of silver nitrate solution are furnished them and they are instructed in the use of this to prevent gonorrheal infection of the eyes of the new-born babies.

Malaria:

A moving picture film on Malaria, which was loaned us by Mr. Fisher, Dept. of Malaria Control, was shown in seven counties during the summer by our Moving Picture Unit. 16 lectures on Malaria were given in Charleston County to rural schools and the high school pupils wrote compositions on Malaria after the lecture, a prize being offered for the best composition. In Fairfield County our Health Officer is trying to create an interest in Malaria Control in order that money may be raised and a campaign of eradication put on by the Department of Malaria Control. The Health Officer in Orangeburg made several lectures in Holly Hill on the importance of this work, and assisted in securing the funds to put on control measures against malaria in this town. In Newberry County the Health Officer took blood smears from fifty people in an infected community and made microscopic examination of these smears.

Infant and Maternal Hygiene:

Forty-nine baby clinics have been held during this year, at which the Health Officer examined the babies, and Nurses and

Home Demonstration Agents gave instructions on infant care and infant feeding. 1,940 babies were examined.

Midwife classes have been held in six counties. 209 midwives have been registered and instructed in the proper care of maternity cases. As stated above, they have been instructed how to care for the baby's eyes and in four counties they are furnished free sterile ampouls of silver nitrate. Seven have been prosecuted for practicing midwifery without taking this course of instruction.

We have had three near-epidemics of diphtheria. The exposed children have been given the Schick test to determine how many were susceptible, and 40 were given immunizing doses of diphtheria antitoxin.

Medical Examination of School Children:

Our seven County Health Officers have examined the children of 2,619 schools during the year. 14,757 children have received a medical examination. 846 defective children have been treated. In cases of operation for adenoids and diseased tonsils, when the parent has been unable to pay, we have been able to secure free treatment. The majority of defects have been diseased tonsils, adenoids, and defective teeth, but some cases of tuberculosis have been found and a good many cases of defective vision. In a number of communities, in co-operation with the County Home Demonstration Agent, we have held nutrition classes for benefit of mothers of children suffering from malnutrition. Many children are under nourished, not from lack of food, but from improper diet. The mothers are consulted and given assistance in proper preparation and selection of food for growing children.

Free Clinics:

In addition to clinics given above we have held some tonsil and adenoid clinics, and three counties, in co-operation with the Dental Associations, are starting free dental clinics. In one community a general clinic was held in co-operation with physicians and both adults and children were offered a free physical examination.

Dr. Kneece, of the Newberry County Health Department, assisted at a tonsil and adenoid clinic in Manning. He administered anaesthetics and assisted in the operation of 43 children. At Garnett, in Hampton County, Dr. Knotts, of the Orangeburg

Department, gave anaesthetics and post-operative care to 36 children for the removal of tonsils and adenoids. Dr. Banov, of the Charleston Department, has examined the pupils of the Estill school to determine the operative cases. A clinic will be held at the school in January.

I feel that I can voice the sentiment of all the County Health Officers, and their assistants, in the following words taken from the annual report of Dr. Knotts, our Health Officer in Orangeburg County: "We have tried to do our work conscientiously and faithfully. It has been wonderful work and has carried with it the personal satisfaction of its results. We believe that we have made in many cases useful and happy citizens out of physical derelicts. There is no big building, or monument erected in appreciation of what we have done, but in our opinion the results are of greater significance for we are dealing with that sacred edifice the Human Body."

A statistical report follows, also figures showing death and disease reduction in some counties where work has been done.

Respectively submitted,

L. A. RISER, M. D.,

In Charge.

STATISTICAL REPORT FOR ELEVEN MONTHS OF THE YEAR 1921.

Department of Rural Sanitation and County Health Work.
S. C. State Board of Health.

CONSTRUCTIVE WORK.

No. septic tanks installed.....	247
No. pits installed	1,164
No. buckets installed	6
No. sewerage installed	6
No. other types installed	39
No. homes screened	953

EDUCATIONAL WORK.

No. lectures delivered	511
No. talks to school children	255
No. clubs organized	30
Literature distributed	36,162

Letters written (office)	13,257
Circular letters mailed	16,020
Homes visited by Director	3,141
Homes visited by Inspectors	11,600
Homes visited by Nurses and Social Workers.....	4,418
Total homes visited	19,601

CONTAGIOUS AND INFECTIOUS DISEASES.

No. contagious diseases investigated	868
No. vaccinations (smallpox)	32,562
No. typhoid cases investigated	132
No. inoculations (typhoid)	12,903
No. tuberculosis cases investigated	91
No. other diseases investigated	189

MEDICAL EXAMINATION.

No. schools visited	251
No. schools examined	619
No. pupils examined	14,757
No. pupils defective	7,198
No. defects	10,362
No. defects corrected	846
Attendance	40,537
Children present	8,056
Members enrolled	966

LABORATORY WORK.

No. examined for hookworm	1,855
No. infected	334
No. treated	145
Other laboratory work	308

L. A. RISER, M. D.,
State Director.

SOUTH CAROLINA.

DEATHS IN ENTIRE STATE OF SOUTH CAROLINA IN 1917, IN COMPARISON
WITH DEATHS FOR SAME AREA IN 1920.

Disease	1917.	1920.	Per Cent. Reduced.
Total Deaths	19,672	19,619	.7
Still Births	2,490	2,436	2.8
Children under 5 yrs. of age	7,144	6,426	10.1

Disease.	1917.	1920.	Per Cent. Reduced.
Measles	146	13	91.2
Typhoid	396	262	32.9
Tuberculosis	1,480	1,337	9.7
Pellagra	146	219	Increased.
Whooping Cough	76	122	50.0
Pneumonia	1,463	2,413	73.6
			64.9

DARLINGTON COUNTY.

DEATHS IN DARLINGTON COUNTY IN 1917, THE YEAR BEFORE THE COUNTY HEALTH DEPARTMENT WAS ESTABLISHED, IN COMPARISON WITH THE DEATHS IN 1920. THREE YEARS AFTER THE HEALTH DEPARTMENT WAS ESTABLISHED.

Disease.	1917	1920	Per Cent. Reduced.
Total Deaths	654	491	25.0
Still Births	76	56	26.4
Children under 5 yrs. of age	252	205	18.7
Intestinal Diseases, "Summer Complaint," Colitis, Diarrhea, Dysentery, Children under 5 yrs. of age	86	38	55.9
Measles	30	0	100.0
Whooping Cough	14	14	No Change.
Pneumonia	36	26	27.8
Typhoid	10,	2	80.0
Tuberculosis	45	51	Increased. 31.3
Pellagra	9	4	Reduced. 55.6

SOUTH CAROLINA AND DARLINGTON COUNTY.

COMPARISON OF PERCENTAGES OF INCREASE AND REDUCTION OF DISEASE IN DARLINGTON COUNTY FROM 1917 TO 1920, WITH STATE AT LARGE FOR SAME PERIOD.

Disease	Darlington Co. Reduced Per Cent	State. Reduced. Per Cent.
Total Deaths	25.0	.7
Still Births	26.4	2.8
Children under 5 yrs. of age	18.7	10.1
Measles	100.0	91.2
Typhoid	80.0	32.9
Pellagra	Reduced 55.6	Increased. 50.0
Pneumonia	27.8	64.9
Whooping Cough	No Change.	73.6
Tuberculosis	Increased 13.3	Reduced. 9.7

GOVERNMENT REPORT OF PERCENTAGE OF INCREASE AND REDUCTION
OF DEATHS FROM 1917, TO 1920 OF DARLINGTON AND ADJOIN-
ING COUNTIES.

Disease	Darlington Reduced Per Cent.	Chesterfield Increased Per cent.	Marlboro Increased Per Cent.	Florence Increased Per Cent.
Total Deaths	25	8.8	18.0	25.3
Still Births	27	16.2	3.0	.6
Typhoid	80	50.0	55.5	18.8
	Increased	Reduced		Increased.
Tuberculosis	13	22.3	26.9	31.7

GOVERNMENT REPORT OF PERCENTAGES OF INCREASE AND REDUCTION
OF DEATHS.

FAIRFIELD COUNTY IN COMPARISON WITH THE STATE OF SOUTH
CAROLINA FROM 1919 TO 1920.
FAIRFIELD.

Disease	1919	1920	Per Cent. Reduced.
Total Deaths	294	277	35
Still Births	30	27	10
Typhoid	5	2	60
Tuberculosis	20	13	35

STATE.

	1919	1920	Per Cent. Increased.
Total Deaths	18,992	19,619	10.3
Still Births	2,372	2,436	10.2
Typhoid	294	262	10.9
Tuberculosis	1,466	1,335	9.0

LEE COUNTY IN COMPARISON WITH THE STATE OF SOUTH CAROLINA,
FROM 1917 TO 1920.
LEE.

Disease	1917	1920	Per Cent. Reduced.
Total Deaths	339	268	22.00
Still Births	40	42	.05
Typhoid	11	4	63.70
Tuberculosis	22	18	18.20

STATE.

Disease	1917	1920	Increased.
Total Deaths	18,922	19,619	10.3
Still Births	2,372	2,436	10.2
Typhoid	294	262	Reduced.
Tuberculosis	1,466	1,335	10.9
			9.0

Figures for 1917 taken instead of 1918 because the epidemic in 1918, of influenza caused the death rate to be much higher than under ordinary conditions. The Lee County Health Department was in operation during the years of 1919 and 1920.

ANNUAL REPORT SOUTH CAROLINA AND PALMETTO SANATORIA.

*To the Chairman and Members of the Executive Committee,
South Carolina State Board of Health.*

Gentlemen: Since the last annual report 110 patients have received treatment at the South Carolina Sanatorium. Of these 52 were women and 58 were men. There are now 55 patients in the institution. 25 of these are far advanced and 30 moderately advanced cases of tuberculosis. Of those discharged, 27 were far advanced, 27 moderately advanced and 1 incipient; 8 were apparently arrested, 3 quiescent, 13 improved, 19 not improved, while 12 died. The sputum was positive for 44 and negative for 11 upon discharge.

The average gain in weight by 32 patients at discharge was 27 pounds. The average loss in weight of 8 patients was 5 1-2 pounds, while weight charts of 3 were incomplete. 12 patients remained less than 30 days; their weight records are not included.

The following tuberculous complications occurred:

Hemorrhage, 8.

Meningitis, 1.

Laryngitis, 9.

Enteritis, 6.

Fistula, 1.

Empyema, 2.

Epididymitis and Orchitis, 1.

Non-tuberculosis complications were:

Intestinal obstruction, 1.

Hemorrhoids, 2.

Syphilis, 7.

The Palmetto Sanatorium for negroes was opened December 26, 1920. The first patient was admitted from Beaufort County. 58 patients have received treatment. 21 are now resident, 15 of whom are far advanced and 6 moderately advanced; 1 is quiescent, 11 improved and 9 not improved. 37 have been discharged, 28 of whom were far advanced, 7 moderately advanced, 1 non-tuberculous, 1 not classified. 3 were quiescent, 4 improved, 14 not improved, 16 died.

The following tuberculous complications occurred:

Enteritis, 9.

Meningitis, 1.

Laryngitis, 4.

Hemorrhage, 10.

Non-tuberculous complications:

Syphilis, 7.

The number of hospital days for the South Carolina Sanatorium is 19,682; for the Palmetto Sanatorium, 5,142, making a total of 24,824 days.

Since October 23, 1921, Dr. P. D. Brooker has conducted a dental clinic once a week. His report is appended.

Miss Katherine Heyward has given instruction in handwork or occupational therapy once a week since November 9, 1921. Only a beginning has been made with this feature, but it promises to be of value to the patients. It assists in relieving the tedium of cure-taking, presents introspection, the discussion of symptoms, and furnishes a means of support to those who become proficient.

The farm and dairy have furnished the Institution with fresh vegetables, etc., amounting to \$567.90; veal, pork, and sale of calves valued at \$343.20; produced 5 tons of hay, 25 tons of ensilage, and supplied 9,417 gallons of milk. A 70-ton silo was built this year and running water put into the barn.

The swamp in the pasture has been drained and other marshy places ditched. Approximately 25 acres have been cleared of scrub oaks, making about 50 acres available for cultivation, and 25 acres have been sown with rye for grazing and as a cover crop. A carload of lime has been spread upon the cleared land this month. Preparations are being made to set out pecan and fruit trees.

A contour map of the property is now being made by Mr. E. L. Filby, the State Sanitary Engineer.

An electric power line is under construction connecting the sanatoria with the line built by the State Hospital. It will be completed within thirty days. Plans are on foot to install an automatic telephone system in the several buildings. This work is being done by the J. W. Blease Electric Co. under the supervision of Mr. S. Cannon, State Electrician.

A five room addition to the Palmetto Sanatorium for the isolation of moribund patients is now in building. It will fill a great need, giving privacy and seclusion to the extremely sick and lessening the depression and dissatisfaction which results from association with such patients.

Cash on hand December 1, 1920 was \$574.33; Dr. Hayne has supplied a contingent fund of \$3,645.24, sundry sales and collections have amounted to \$848.66, while purchases and expenditures have been \$5,068.23, leaving nothing on hand December 31, 1921.

During the year the superintendent has assisted at Health Clinics conducted by the County Health Officers at Mullins, Marion, Anderson, Winnsboro, Chester, Newberry, Darlington, Hartsville and Gaffney and read a paper at the State Summer School at Rock Hill on Tuberculosis Day.

There is no stronger argument for increased facilities at the Sanatorium than the insistent demand of fifty applicants awaiting admission. We need at once another building comparable to the infirmary. There should be symmetrical development of all utilities, such as increased supply and storage of water, sewerage disposal plant, cold storage rooms and laundry. Other needs are a superintendent's home, nurses' home, amusement hall, servants' houses.

The fire risk is considerable with frame buildings. An elevated water tank of 100,000 gallons capacity with pipe lines and hydrants and a sprinkler system would lessen this serious hazard.

The advance of science now requires a roentgen picture of the chest to make an examination complete. The institution needs an X-Ray outfit.

The Ministerial Union of Columbia arranged a schedule by which religious services have been conducted at the sanatorium. Other church organizations have furnished entertainment and held services from time to time.

I wish to express my appreciation of the cordial support and co-operation given by the members of your Committee and by the State Board of Health Officer.

Respectfully submitted,

ERNEST COOPER, Supt.

State Park, S. C.,
December 31, 1921.

COSTS PER PATIENT PER DAY, SOUTH CAROLINA AND PALMETTO SANATORIA, 1921.

The following figures are compiled by the State Sanitary Engineer from official total expenditures for the year 1921 State appropriations and the South Carolina Sanatorium fund. Figures include allotment of portion of expenditures provided for the period of life of certain improvements; for example: The cost of painting the buildings is divided by 3 and 1/3 allotted to this year's expenditure, the assumption being that the buildings will have to be repainted in three years.

The valuation of the buildings and property are taken from official inventory of July 1st, 1921, of approximate amount \$100,000.00. The life of the structures is estimated at 20 years and depreciation allotted for expenditure per year is \$5,000.00. The valuation of the equipment of the institution is taken from official inventory of above date and depreciation allotted is \$3,413.20, this sum being made up from the valuation of the different classes of equipment divided by their supposed period of usefulness. Headings are official State budget classifications.

No. of hospital bed days at institution, 1921,.....	24,824
(1 patient in bed 1 week equals 7 hospital days.)	
No. 1. Cost per patient per day on funds invested...	.20
(Buildings and grounds.)	
No. 2. Cost per patient per day on equipment prior to 1921 depreciation .....	.14
No. 3. Personal Service (cost per year), State funds \$17,430.45	
Personal Service (cost per year), S. C. Sanatoria funds	942.50
Total cost per patient per day.....	.74
No. 4. Contractual Services (cost per year), State....	3,510.31
Contractual Services (cost per year), S. C. San- atoria	1,031.57
Total cost per patient per day.....	.18
No. 5. Supplies (cost per year), State.....	18,510.51
Supplies (cost per year), S. C. Sanatoria.....	3,845.48
(Mostly food and fuel.)	
Total cost per patient per day.....	.90
No. 6. Fixed Charges (cost per year), State.....	1,258.57
Fixed Charges (cost per year), S. C. Sanatoria	5.11
Total cost per patient per day.....	.05

No. 7. Materials (cost per year), State.....	506.53
Materials (cost per year), S. C. Sanatoria....	84.47
Total cost per patient per day.....	.025
No. 8. Equipment (cost per year), State.....	447.38
Equipment (cost per year), S. C. Sanatoria...	294.79
Total cost per patient per day.....	.03
No. 9. Buildings and Structures (cost per year), State	138.51
Total cost per patient.....	.005

SUMMARY.

Buildings and grounds.....	\$0.20
Equipment prior to 1921.....	.14
Maintenance and Expenditures, 1921.....	1.93
<hr/>	
Total cost per patient per day.....	\$2.27

REPORT OF DENTAL CLINIC, S. C. SANATORIUM.

By P. D. BROOKER, D. D. S., December 31, 1921.

*To Dr. James A. Hayne, Secretary State Board of Health, and
Dr. Ernest Cooper, Superintendent:*

At your direction I established limited facilities for a clinic in the Sanatorium and began a regular weekly series of appointments on October 21, 1921. I missed one of the regular appointments unavoidably and have therefore met nine appointments up to the present time.

I found the patients almost without exception handicapped by the presence of foci of infection, some of them with many such diseased teeth and many suffering from extensive pyorrhea. I have established this service to the patients upon the basis of clearing up all diseased areas and such limited constructive work as will maintain their remaining teeth in a healthy condition. Up to the present time the period has been very profitably filled in attention to this class of work and promises to continue for some time to come before the mere health aspect of it is completely cleared up. The patients as a rule are easily impressed with the fact that they cannot make progress in recovery while handicapped with these depressing conditions and there will be few cases where compulsory attendance on their part will be necessary.

A number of the patients have already provided themselves with prosthetic restorations of lost teeth and many others will

be well enough equipped for efficient chewing without such restorations, but there will be a number of the patients that will need such restorations very badly and who have not the means to provide them for themselves. It is very essential that they may be enabled to properly masticate their food to provide for its full nutritional value. I would recommend a provision that such patients to whom it is essential, be provided with such restorations.

I wish to call your attention to the necessity of adequate equipment for more efficient and more economical service. It is very difficult to render good dental service without such equipment which makes it a very unattractive service to those who have a conscientious regard for the quality of their services.

Assuring you of my opinion that the clearing up of these dental conditions will contribute largely to the progress that the patients will make toward recovery and thanking you for your cooperation in establishing this clinic and its maintenance.

Yours very truly,

P. D. BROOKER, D. D. S.

ANNUAL REPORT STATE SANITARY ENGINEER, 1921.

*To the Chairman and Members of the Executive Committee,
South Carolina State Board of Health:*

Gentlemen: The past year has shown considerable activity on the part of municipalities, mills, schools and other institutions along the lines of water supply, sewerage and sewage disposal. Together with these activities have come the usual number of complaints relative to the disposal of sewage and garbage, the maintenance of hog pens, and the creation of nuisances due to foul odors and the pollution of our streams. The handling of these matters has largely been the duty of the undersigned although in press of circumstances other organizations within the State Board of Health have attended to like matters. An itemization of the activities of the State Sanitary Engineer by places visited and purpose would consume too much space and in the interests of economy is omitted. Suffice to say that the activity is State-wide—subject to the call of any citizen with regards to the matters mentioned above. Requests and investigations called the engineer into 42 of the 48 counties during the past year.

The main activity has been along the lines of water supply and sewage disposal. Many towns and mills have been putting in new water and sewer systems or modifying their existing systems and have submitted their plans of proposed installation for consideration. Among those who have called for this service are the cities of Batesburg, Barnwell, Blacksburg, Clio, Florence, Greenwood, Pickens, Seneca, Union, Walhalla and the cotton mills of the Victor Monaghan group and those at Buffalo, Abbeville, Dillon, Cowpens, Landrum, Fairforest and Winnsboro. The public water supplies of the State have been visited and routine surveys made to enable the Board to certify the waters for drinking and culinary uses upon the common carriers as coming up to the high standard set by the Federal Government. Thru these visits have come improvements in many existing plants and a better understanding between the men in charge and the Board of Health. When one realizes the financial situation of our towns and the popular demand for the expenditure of funds for paving—then it will be understood what obstacles the waterworks superintendent has to overcome to get authorization to purchase a \$600.00 chlorinator to treat the water especially when this treatment is considered unnecessary by most everyone including some of the men in charge of the purification plants. Over half our supplies from surface waters are now chlorinated and in the past year Abbeville, Chester and Greenwood have adopted this final treatment on supplies hitherto considered perfectly satisfactory without it.

A small, five page mimeographed monthly letter entitled "*Sewat*" devoted to sewage and water treatment, is sent out monthly free of charge to the men in charge of water plants and others intersted in such matters. The letter is very cheaply gotten out and is intended to be a medium for the exchange of ideas and the educational advancement, along the modern methods of handling water and sewage, of the men engaged in safeguarding the lives of over 300,000 of our people by maintaining at all times a safe, adequate water supply. This letter was instituted only after the idea had received the approval of six representative waterworks superintendents of the State. It is believed to be doing a good work and meeting the approval of the men who receive it. This piece of educational work is the first regular monthly publication ever put out by the State Board of Health. The undersigned handles the entire matter excepting

the mimeographing which is done outside.

Among the numerous other activities, we may include investigation of typhoid fever in Greenville County, at Clinton, at the Victor-Monaghan Mill at Greer; a sanitary survey of Abbeville Mill Village with reference to water supply, sewerage, garbage, milk, fly breeding, swimming pool, etc.; assistance to the S. C. Department of Agriculture—Department of Factory Inspection—with regard to the water supplies and sewerage of the mills; assisting local health authorities with regards to sewage disposal among which may be mentioned Clover, Inman, Greenwood, Florence, Walterboro; writing regulations pertaining to sewage disposal of construction gangs working on the Goose Creek (City of Charleston) water shed; matters of camp sanitation for the Southeastern Life Insurance Company's camp near Caesar's Head; investigation of water contamination by sewage well at the Williston school; plans and specifications for school water supply and sewage disposal at various points thruout the State; etc. At this time the problem of trade wastes disposal is coming to the fore and as the State Board of Health has no adopted policy or proceedure upon such matters, they have been referred to the State Sanitary Engineer. Action is now pending regarding the odor nuisance from the gaseous wastes apparently emanating from the Standard Oil Company refinery at Charleston. The installation of a large dyeing plant at Greenville will bring up the matter of discoloration of the stream near the plant. The destruction of fish life in our streams, the rendering of our streams unfit for animal or human consumption, the pollution of the air by fertilizer plants, refineries, abattoirs, drying plants, etc., the creation of local nuisances by the creameries, pulp mills, etc., constitute some of the trade waste problems that will confront the sanitary engineer. During the past year the undersigned was detailed to and attended the conference of the State Sanitary Engineers in connection with the meeting of the State and Territorial Health Authorities and the instiute and meeting of the Sanitary Engineering Section of the American Public Health Association.

Many problems of office work have been turned over to the undersigned that involved financial accountings and other subjects not commonly considered the duties of an engineer. The inventory of all State property and equipment used by the Board

and its valuation was made in July. With the assistance of the bookkeeper, the budget of expenditures for 1920 and 1921 and requests for 1922 was prepared as required by the Budget Commission. The disbursement of all funds was successfully handled while the bookkeeper was ill in the hospital. During her absence the Joint Legislative Committee on Economy and Consolidation called for additional financial data from the State Board of Health and an exhaustive report was made from her books involving receipts, expenditures, proposed receipts and planned expenditures, financial accountings, etc. in budget form for the years of nineteen twenty one and two, of all funds requested, was prepared and submitted. An analysis of the expenditures, receipts, overhead charges, depreciation, etc. for the S. C. and Palmetto Sanatoria was made to determine the exact cost of the institutions per patient per day, for the year 1921.

A series of maps—12 in all—of South Carolina, each about 4 foot square, was made showing in varied colored inks, the activities of the Board. Each division of the Board had one or more maps illustrating their work. These maps were displayed to acquaint the general public and the medical profession as to what the State Board of Health was doing. Photographic reproductions—colored—created general interest and favorable comment among the State Health Officers at their annual meeting. Requests for sets were received from the State Health Officers of Massachusetts, Mississippi and Colorado and a recent issue of the Monthly Digest of the National Health Council commented upon them favorably. This work was largely done outside of office hours—on evenings and Sundays.

Assistance to various organizations within the State Board of Health has been rendered when desired. A topographic survey of the Tuberculosis Sanatoria property at State Park is partially completed. This will give a complete plan of the property showing two foot differences of elevation, houses, fence lines, streams, woods, etc., and make possible the enlargement of the institution according to a definite outlined program. A spring water supply for the dairy barn there was completed. Charts and curves of various diseases were made for the State Health Officer. The State Board of Health main exhibit at the State Fair was designed and executed with the assistance of members of the Child Hygiene Division and others.

The spirit of service—cheerfully and unselfishly given to all

has permeated the past year's work and opportunity is here taken of thanking the waterworks men of the State, city and cotton mill officials, members of the local and State Boards of Health and co-workers for their co-operation and help in the past year. Work for the new year will undoubtedly be a further expansion of the above mentioned activities for the work of the State Sanitary Engineer is now becoming generally known and requested.

Respectfully submitted,

E. L. FILBY, C. E.,
State Sanitary Engineer.

REPORT OF STATE HOTEL INSPECTOR.

Executive Committee State Board of Health,

Dr. Robt. Wilson, Chairman.

Dear Sir: I submit the following as a summary of the work done by me as Hotel Inspector, for the year 1921:

We began the work this year with an appropriation of six thousand dollars, which has been expended, and was sufficient to carry out the work for the year.

We have collected in fees prescribed by law, in round numbers, six thousand dollars. This money has been turned into the State Treasury as is prescribed by law.

We have visited every Hotel and Restaurant in the State at least once, and a great many of them have been visited several times. This being the second year of the work, we have not been as lenient in the inspection as we were last year. We have had to order closed up four hotels for failure to comply with the law. Two of these have since been allowed to reopen and be run as a temporary convenience for the public until something can be done for a better hotel in the town in which they are located. Owing to the financial conditions existing, we have been forced to forego some improvements we would like to have had made in some of the hotels. We try to be reasonable and meet the conditions as they exist in each particular case. We are glad to say that we note a marked improvement in the sanitary conditions in hotels throughout the State, since our visits of inspection last year. We are kept continually on the go

throughout the year, making regular inspections and attending to complaints from the traveling public as they may come into the office.

Respectfully submitted,

J. H. WOODWARD,
Hotel Inspector.

REPORT OF CHEMIST AND BACTERIOLOGIST.

To the Chairman and Members of the Executive Committee of the State Board of Health.

Gentlemen: I have the honor to submit the following tabulated report of analysis of samples of water from the public water supplies of South Carolina, made under the direction of the State Board of Health, in accordance with the laws of South Carolina relating to the purity of the water supplies of towns and cities, I Code, Section 1599, and of information as to officials of local boards of health and plants, source, capacity, treatment, daily consumption and consumption per capita, discharge of sewerage and disposition of garbage.

Very respectfully,

FRANCIS L. PARKER, M. D.

RESULTS IN PARTS PER MILLION

Water Supply of Abbeville S C

Abbeville Water & Electric Plant. Owned by City, Superintendent, C. P. Townsend, Jr. In charge of collection of samples, C. P. Townsend, Jr. Chairman local Board of Health, Dr. C. H. Murray.
 Source: Creek, 1.4 miles from city. Capacity, 250,000 gallons per day; filtered by mechanical filter Treatment, one-half grain alum per gallon. Capacity of plant, 500,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered. Sixty per cent of residences using city water supply; 60 per cent of city sewered and have water closets. Sewerage empties into creek. No garbage disposal plant. Garbage dumped in old fields and gullies.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 8, 1921.....	9.00	0.03	0.03	0.00	0.20	62.00	Negative	Negative
June 6, 1921.....	6.00	0.02	0.04	0.00	0.20	94.00	Negative	Negative
September 3, 1921.....	8.00	0.02	0.03	0.00	0.10	71.00	Negative	Negative
December 6, 1921.....	7.00	0.01	0.03	0.00	0.10	78.00	Negative	Negative

Water Supply of Aiken S C

City Water works. Superintendent, H. Sudlow. In charge of collection of samples, H. Busch. Chairman local Board of Health, Dr. H. T. Hall.
 Source: Collection of Springs, 6 1/2 miles from city. Capacity 2,000,000 gallons per day; not filtered. Capacity of plant, 1,500,000 gallons per day. Average consumption, 350,000 gallons per day. Consumption per capita, 80 gallons per day. One hundred per cent city using city water supply. Sewerage system: 75 per cent city sewered, 50 per cent buildings connected with sewer and have water closets. Sand filter beds. Sewerage empties into small streams. No garbage disposal plant.

March 7, 1921.....	5.00	0.01	0.02	0.00	0.20	17.00	Negative	Negative
June 4, 1921.....	5.00	0.02	0.03	0.00	0.30	45.00	Negative	Negative
September 6, 1921.....	7.00	0.03	0.04	0.01	0.10	30.00	Negative	Negative
December 6, 1921.....	5.00	0.01	0.02	0.01	0.00	13.00	Negative	Negative

RESULTS IN PARTS PER MILLION.—(Continued)

Water Supply of Allendale, S. C.

Allendale Light & Water Plant. Owned by town. Superintendent J. W. Mallard. In charge of collection of samples, J. W. Mallard. Chairman of local Board of Health, Dr. J. E. Warnock.
 Source: Deep well, 752 feet deep, 8 inches diameter, near the center of town; not filtered. Capacity 240,000 gallons per day. Average consumption 60,000 gallons per day. Consumption per capita 34 gallons per day. Sixty per cent service metered, 88 per cent of residences using city water supply; 68 per cent of buildings connected with sewers and have water closets. Septic tank and sprinkling filter. Sewage empties into Cosawhatchie River. No garbage disposal plant; garbage dumped in open fields 1-1.2 miles from city and burned.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 3, 1921	7.00	0.01	0.03	0.00	0.00	124.00	Negative	Negative
June 6, 1921	9.00	0.02	0.03	0.00	0.00	165.00	Negative	Negative
September 7, 1921	9.00	0.03	0.03	0.00	0.10	146.00	Negative	Negative
December 6, 1921	5.00	0.01	0.01	0.00	0.00	103.00	Negative	Negative

Water Supply of Anderson S C

Southern Public Utilities Co. Manager, H. A. Orr. In charge of collection of samples, R. T. Long. Chairman of local Board of Health, H. H. Aker.
 Source: Bailey's Creek, 2 miles, and Rocky River, 3 miles from city. Capacity 20,000,000 gallons per day. Filtered by mechanical filter. Treatment 1-2 grain alum per gallon. Capacity of plant, 2,500,000 gallons per day. Consumption per capita, 50 gallons per day. Service metered, 95 per cent of buildings use city water supply. Sewerage system: 93 per cent. of city sewered. No sewerage disposal plant. Sewerage empties into Rocky River and Generostee Creek.

March 3, 1921	6.00	0.02	0.03	0.00	0.20	45.00	Negative	Negative
June 6, 1921	6.00	0.03	0.04	0.00	0.10	74.00	Negative	Negative
September 7, 1921	6.00	0.03	0.04	0.00	0.20	37.00	Negative	Negative
December 7, 1921	5.00	0.02	0.02	0.00	0.10	37.00	Negative	Negative

Water Supply of Bamberg S C

Light & Water Department of Commission of Public Works. Owned by city. Superintendent, R. Clyde Rowell. In charge of collection of samples, A. L. Edwius. Chairman of local Board of Health, Dr. H. J. Stuckey.
Source: Flowing well, artesian, in city, diameter 3 inches, depth 480 feet. Capacity of plant 70,000 gallons per day. Average consumption 60,000 gallons. Service metered; 60 per cent buildings using city water supply; 60 per cent have septic tanks. Sewerage System. City is not sewered except private tanks. No garbage disposal plant. Garbage disposed of in dump wagon.

March 11, 1921	7.00	0.02	0.03	0.00	0.00	58.00	Negative
September 10, 1921	7.00	0.03	0.04	0.01	0.10	84.00	Negative

Water Supply of Barnwell, S C

Barnwell Light & Water Works. Owned by city. Superintendent, F. H. Miller. In charge of collection of samples, F. H. Miller. Chairman of local Board of Health, Charlie Brown.
Source: Four wells, three 4 1-2 inches and one 6 inches in diameter. 151 feet deep in city. Capacity 200,000 gallons per day. Not filtered. Capacity of plant 72,000 gallons per day. Average consumption 45,000 gallons per day. Consumption per capita 30 gallons per day. Entire service metered, 50 per cent of buildings using city water supply. Sewerage system has been installed. 90 per cent of buildings have water closets; 10 per cent have septic tanks.

March 7, 1921	7.00	0.01	0.01	0.00	0.00	92.00	Negative
June 4, 1921	7.00	0.03	0.04	0.00	0.30	87.00	Negative
September 12, 1921	6.00	0.03	0.03	0.00	0.00	118.00	Negative
December 7, 1921	4.00	0.02	0.02	0.00	0.00	67.00	Negative

Water Supply of Batesburg, S. C.

Commission of Public Works. Owned by town. Superintendent R. E. Hoover. In charge of collection of samples, R. E. Hoover. Chairman of local Board of Health, Dr. R. M. Timmerman.
Source: Three wells in city. Not filtered. Capacity 176,000 gallons per day. Average consumption 50,000 gallons per day. Consumption per capita 2 gallons per day. Service metered; 100 per cent buildings using city water supply; 10 per cent septic tanks. Complete sewerage system. 2 garbage disposal plants.

April 25, 1921	9.00	0.01	0.02	0.00	0.20	150.00	Negative
June 20, 1921	9.00	0.03	0.02	0.00	0.00	115.00	Negative
October 22, 1921	8.00	0.02	0.02	0.00	0.00	136.00	Negative

RESULTS IN PARTS PER MILLION.—(Continued)

Water Supply of Beaufort S. C.

Town of Beaufort, S. C. Water & Light Department. Superintendent Water and Light, T. W. Logan. In charge of collection of samples, John Collier. Chairman of local Board of Health, Dr. C. M. Giffin.
Source: Well 12 inches in diameter and 125 feet deep, in center of city. Not filtered. Average consumption 50,000 gallons per day. Consumption per capita 200 gallons per day. Service partly metered. 30 per cent buildings connected with city water supply. No sewerage system; 50 per cent private sewers. Sewerage empties into Salt Water River. No garbage disposal plant. Garbage dumped at edge of city limits and burned.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 11, 1921	35.00	0.01	0.04	0.00	0.10	215.00	Negative	Negative
June 8, 1921	35.00	0.02	0.04	0.00	0.00	223.00	Negative	Negative
September 9, 1921	33.00	0.07	0.07	0.01	0.00	216.00	Negative	Negative
December 9, 1921	25.00	0.04	0.02	0.00	0.00	188.00	Negative	Negative

Water Supply of Bennettsville, S. C.

Bennettsville Electric & Water Plant. Owned by city. Manager, E. C. Morrison. In charge of collection of samples, E. C. Morrison. Chairman of local Board of Health, Dr. O. A. Matthews.
Source: Eight wells, 4 1-2 inches in diameter, six 60 feet deep and two 40 feet deep. Pumped by steam or electric pumps. Average consumption 275,000 gallons per day. Capacity of plant 500,000 gallons per day. Consumption per capita 70 gallons per day. All services except public services metered. 95 per cent buildings in business and residence section and 60 per cent buildings in corporate limits using city water supply. Sewerage system. 87 per cent of buildings in residence section and in business section and 65 per cent buildings in city limits connected with sewer and have water closets. Septic tank. Sewerage empties into Crooked Creek 1 1-2 miles from city. No garbage disposal plant.

March 9, 1921	23.00	0.01	0.02	0.00	0.50	76.00	Negative	Negative
June 8, 1921	25.00	0.05	0.05	0.00	0.50	94.00	Negative	Negative
September 8, 1921	26.00	0.03	0.04	0.00	0.40	68.00	Negative	Negative
December 6, 1921	30.00	0.05	0.03	0.01	0.60	111.00	Negative	Negative

Water Supply of Camden, S. C.

City of Camden Water & Light Plant. Superintendent, W. B. Allred. In charge of collection of samples, John W. Wilson and W. B. Allred. Chairman local Board of Health, C. A. West.

Source: Spring fed creek, 1 mile from city limits. Capacity 7,200,000 gallons per day, filtered by mechanical filters. Treatment 1 1/4 grains alum per gallon, 1.29 grains soda ash per gallon. Capacity of plant 575,000 gallons per day. Eighty one per cent of buildings connected with and using city water supply. Sewerage system: 54 per cent of buildings connected with sewerage system and have water closets. Sewerage empties into Wateree River. No garbage disposal plant. Garbage emptied on outskirts of town and partly burned.

March 7, 1921	6.00	0.01	0.02	0.002	0.10	44.00	Negative
June 4, 1921	7.00	0.02	0.03	0.00	0.20	20.00	Negative
September 7, 1921	5.00	0.03	0.03	0.00	0.00	28.00	Negative
December 7, 1921	7.00	0.02	0.02	0.00	0.00	30.00	Negative

Water Supply of Charleston, S. C.

City Water Department, Commission of Public Works. Manager and Engineer, James E. Gibson. In charge of collection of samples, Dr. F. L. Parker. Chairman of local Board of Health, J. A. Ball.

Source: Goose Creek, 12 miles from the city. This is an impounded supply, the reservoir being an old tide water basin dammed off from tidal sea water. Area of flooded reservoir 2,100 acres. Capacity 2,700,000 gallons which would supply 8,000,000 gallons per day. Filtered by mechanical filter. Treatment sulphate of alumina, hydrate of lime and liquid chlorine. Capacity of plant, pumping 10,000,000 gallons, filters 14,000,000 gallons. Average consumption 6,500,000 gallons per day. Consumption per capita 85 gallons per day. Service 98 per cent metered. Supplementary supply, Ashley River. Bacon's Bridge; drainage area 231 square miles. Available supply as at present developed 2,000,000 gallons. Sewerage system: Sewerage empties into Charleston Harbor. Garbage disposal plant, incinerator.

April 4, 1921	17.00	0.04	0.19	0.00	0.00	102.00	Negative
July 5, 1921	22.00	0.04	0.17	0.00	0.00	95.00	Negative
September 9, 1921	15.00	0.04	0.18	0.00	0.10	77.00	Negative
December 8, 1921	21.00	0.03	0.15	0.00	0.00	118.00	Negative

Water Supply of Chester, S. C.

Chester Water Works. Owned by city. Superintendent J. H. McLure. In charge of collection of samples, J. H. McLure, Chairman of local Board of Health, J. M. Wise.

Source: River 3 miles from city. Capacity 7,200,000 gallons per day. Filtered by mechanical filter. Treatment 2 grains alum per gallon. Water chlorinated. Capacity of plant 720,000 gallons per day. Average consumption 500,000 gallons per day. Consumption per capita 60 gallons per day. Service metered. 85 per cent of buildings using city water supply. Sewerage system: 85 per cent of city sewered and have water closets. No sewerage disposal plant. Sewerage empties into Tan Yard Branch. Incinerator installed for disposal of garbage.

March 7, 1921	10.00	0.02	0.03	0.00	0.00	93.00	Negative
June 8, 1921	7.00	0.03	0.03	0.00	0.00	90.00	Negative
September 7, 1921	9.00	0.02	0.03	0.00	0.10	75.00	Negative
December 7, 1921	7.00	0.03	0.07	0.00	0.00	87.00	Negative

RESULTS IN PARTS PER MILLION.—(Continued)

Water Supply of Clinton, S. C.

Municipal Water & Light Plant. Superintendent B. B. Mills. In charge of collection of samples B. B. Mills. Chairman of local Board of Health Dr. T. L. W. Bailey.

Source: Wells, one 10 inches and three 8 inches in diameter and 500 feet deep, in city. Capacity 180,000 gallons per day; not filtered. Average consumption 75,000 gallons per day. Consumption per capita 25 gallons per day. Service metered, 80 per cent of buildings using city water supply. Sewerage system: 75 per cent of buildings connected with sewer and have water closets. Septic tanks. Sewerage empties into two streams. No garbage disposal plant. Garbage dumped outside of city limits.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids	Bacterial Indications.	Chemical Indications.
April 2, 1921	11.00	0.01	0.02	0.00	0.40	105.00	Negative	Negative
June 29, 1921	14.00	0.02	0.03	0.00	0.20	198.00	Negative	Negative
September 3, 1921	12.00	0.02	0.03	0.00	0.40	183.00	Negative	Negative
December 22, 1921	12.00	0.01	0.05	0.00	0.30	192.00	Negative	Negative

Water Supply of Columbia, S. C.

Water Department, City of Columbia. City engineer W. S. Tomlinson. In charge of collection of samples G. H. White for Water Works and Dr. Jean LaBorde. Local Health Officer Dr. Jean LaBorde.

Source: Congaree River one mile from city. Capacity practically unlimited. Filtered by rapid sand filters. Capacity of plant 13,000,000 gallons per day. Treatment 1.0 grain alum per gallon. Average consumption 8,000,000. Consumption per capita within city 141 gallons per day. Service metered, 99 per cent of buildings using city water. Sewerage system: 85 per cent of buildings connected with city sewer and have water closets. Sewerage empties into Congaree River. Garbage is being dumped in out of the way places and covered with earth at present, and two disposal plants are now in operation.

March 7, 1921	7.00	0.01	0.03	0.00	0.20	30.00	Negative	Negative
June 14, 1921	7.00	0.03	0.04	0.00	0.00	88.00	Negative	Negative
September 2, 1921	5.00	0.02	0.04	0.00	0.10	47.00	Negative	Negative
December 6, 1921	6.00	0.01	0.03	0.00	0.10	56.00	Negative	Negative

Water Supply of Darlington, S. C.

Palmetto Light & Power Co. Superintendent, T. Miller White. In charge of collection of samples, T. Miller White. Chairman of Local Board of Health, Dr. J. T. Coggeshall.

Source: Wells, diameter 8 inches, depth 335 feet, diameter 6 inches 200 feet and diameter 10 inches, depth 317 feet, in city. Capacity 650,000 gallons per day. Capacity of plant 650,000 gallons per day. Average consumption 200,000 gallons per day. Consumption per capita 45 gallons per day. Service metered: 100 per cent of buildings using city water supply. Sewerage system: Almost all of town is sewered. 75 per cent of buildings connected with sewer and have water closets.

March 7, 1921	9.00	0.01	0.02	0.00	0.20	60.00	Negative
June 7, 1921	7.00	0.02	0.02	0.00	0.00	51.00	Negative
September 9, 1921	7.00	0.02	0.03	0.00	0.00	20.00	Negative
December 7, 1921	4.00	0.02	0.02	0.00	0.00	50.00	Negative

Water Supply of Dillon, S. C.

Dillon Water Works Plant. Owned by city. Secretary and Treasurer, Mrs. Jennie Watson. In charge of collection of samples, J. W. Lovejoy. Chairman of local Board of Health, Dr. L. F. Johnson.

Source: Twenty shallow wells 30 feet deep. Capacity 288,000 gallons per day. Filtered through sand. Treatment, soda ash and alum. Capacity of plant 130,000 gallons per day. Average consumption 75,000 gallons per day. Consumption per capita 30 gallons per day. Service metered. 75 per cent of buildings using city water supply: 75 per cent of city connected with sewerage system, 50 per cent of buildings have water closets. Septic tank. Sewerage empties into Pee Dee River. No garbage disposal plant. Garbage dumped in low and suitable places.

April 9, 1921	8.00	0.02	0.03	0.00	0.40	53.00	Negative
July 5, 1921	10.00	0.02	0.04	0.00	0.50	95.00	Negative
September 17, 1921	9.00	0.03	0.03	0.00	0.30	51.00	Negative
December 20, 1921	8.00	0.03	0.03	0.00	0.30	38.00	Negative

Water Supply of Easley, S. C.

City Water and Light Plant. Owned by city. Superintendent, C. D. Bolt. In charge of collection of samples, C. D. Bolt. Chairman of local Board of Health, Garrison Wyatt.

Source: Wells and Creek. Wells diameter 2 inches depth average 30 feet pumped. Distance from city three-quarters of a mile, creek one mile. Capacity 1,000,000 gallons per day. Creek water filtered by gravity filter. Treatment, lime and sulphate of alumina. Average consumption 125,000 gallons per day. Consumption per capita 17 gallons per day. Service metered. 80 per cent of buildings using city water supply. Six miles of sewerage system. Septic tank. No garbage disposal plant. Garbage dumped into large ditch.

March 14, 1921	5.00	0.01	0.01	0.00	0.30	65.00	Negative
June 15, 1921	5.00	0.03	0.06	0.00	0.00	82.00	Negative
September 16, 1921	5.00	0.03	0.03	0.00	0.00	98.00	Negative
December 15, 1921	5.00	0.02	0.03	0.001	0.30	65.00	Negative

RESULTS IN PARTS PER MILLION.—(Continued)

Water Supply of Florence, S. C.

City of Florence Water Department. Owned by city. Superintendent In charge of collection of samples, Dr. C. C. Craft. Health officer, Dr. C. C. Craft.
 Source: Three wells, capacity 1,000,000 gallons per day; not filtered. Average consumption 600,000 gallons per day. Consumption per capita 91 gallons per day. Service metered. 90 per cent of buildings using city water supply. Sewerage system: 60 per cent of city sewered, 40 per cent connections and water closets. Sewerage disposal plant. Sewerage empties into Jeffries Creek. Nye odorless incinerator, 10 ton capacity, located on outskirts of city.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 25, 1921	26.00	0.01	0.02	0.00	0.10	118.00	Negative	Negative
June 23, 1921	31.00	0.02	0.02	0.00	0.00	140.00	Negative	Negative
September 2, 1921	30.00	0.02	0.04	0.00	0.00	150.00	Negative	Negative
December 13, 1921	25.00	0.01	0.02	0.00	0.10	145.00	Negative	Negative

Water Supply of Gaffney, S. C.

Board of Public Works. Owned by city. Superintendent, L. V. Gaffney. In charge of collection of samples, L. V. Gaffney. Chairman of local Board of Health, J. C. Creech.
 Source: Cherokee Creek 3 1-2 miles from city. Filtered by gravity filter. Treatment 1 grain alum per gallon. Capacity of plant 1,000,000 gallons per day. Average consumption 200,000 gallons per day. Consumption per capita 25 gallons per day. Service metered. 75 per cent of buildings using city water supply. Sewerage system: 40 per cent of buildings connected with sewer and have water closets. Sewerage disposal plant. Sewerage empties into branch. Garbage disposal plant, incinerator, septic tank.

March 14, 1921	5.00	0.01	0.01	0.00	0.30	65.00	Negative	Negative
June 15, 1921	5.00	0.03	0.06	0.00	0.00	82.00	Negative	Negative
September 16, 1921	5.00	0.03	0.03	0.00	0.00	98.00	Negative	Negative
December 15, 1921	5.00	0.04	0.01	0.00	0.00	41.00	Negative	Negative

Water Supply of Georgetown, S. C.

Black River Water Co., G. S. Clarke, President. In charge of collection of samples, Dr. H. L. Wright. Chairman of local Board of Health, Dr. W. W. Gaillard.

Source: Black River. 75 miles from city by river, 15 miles by air line. Capacity 1,000,000 gallons per day. Filtered by slow sand filter. No treatment. Capacity of plant 1,000,000 gallons per day. Average consumption 177,000 gallons per day. Consumption per capita 75 gallons per day. Service metered. Sewerage system: 60 per cent of city sewered. Sewerage empties into Sampit River. No garbage disposal plant. Garbage dumped in low places on abandoned rice fields.

March 4, 1921	11.00	0.02	0.08	0.00	0.30	68.00	Negative
June 21, 1921	12.00	0.03	0.20	0.00	0.00	90.00	Negative
September 2, 1921	11.00	0.03	0.10	0.00	0.10	76.00	Negative
December 6, 1921	10.00	0.01	0.05	0.00	0.20	62.00	Negative

Water Supply of Graniteville, S. C.

Graniteville Manufacturing Co. Superintendent, G. H. Leitner. In charge of collection of samples, E. F. Delvin.

Source: Spring one mile from town. Not filtered. Capacity 40,000 gallons per day. Average consumption 22,000 gallons per day. Consumption per capita 20 gallons per day. Service not metered. 52 per cent of buildings using city water supply. Sewerage system: Ten per cent of city sewered. 2 per cent of buildings connected with sewer. Sewerage empties into Horse Creek. No garbage disposal plant. Garbage dumped outside of town limits.

March 9, 1921	6.00	0.01	0.02	0.00	0.10	31.00	Negative
June 8, 1921	5.00	0.02	0.02	0.00	0.00	50.00	Negative
September 6, 1921	6.00	0.02	0.03	0.00	0.10	22.00	Negative
December 12, 1921	5.00	0.02	0.03	0.00	0.00	20.00	Negative

Water Supply of Greer, S. C.

Commission of Public Works. Owned by city. Superintendent, C. C. McGowan. In charge of collection of samples, C. C. McGowan. Chairman of local Board of Health, Dr. S. E. Holtzclaw.

Source: Four wells in city. Capacity 230,000 gallons per day. Not filtered. Average consumption 100,000 gallons per day. Service metered. 32 per cent of buildings using city water supply. Sewerage system: 30 per cent of buildings connected with sewerage system and have water closets. Sewerage empties into branch. No garbage disposal plant. Garbage dumped into fields outside of city limits.

June 8, 1921	5.00	0.02	0.04	0.00	0.30	67.00	Negative
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RESULTS IN PARTS PER MILLION.—(Continued)

Water Supply of Greenville, S. C.

Greenville City Water Works. Superintendent, H. W. Perry. In charge of collection of samples, H. W. Perry. Chairman of local Board of Health, Dr. Davis Furman.

Source: Streams in Paris Mountain to reservoirs, 8 and 12 miles from city; gravity system. Capacity 5,000,000 gallons per day. Not filtered. Average consumption 2,000,000 gallons per day. Consumption per capita 50 gallons per day. Service metered. 98 per cent of buildings using city water supply. Additional source run only during dry season. Pump station on Enoree River. 3,000,000 gallons daily capacity. Filtered and chlorinated when used. Sewerage system: 75 per cent of city sewered and have water closets. Sewerage empties into Reedy River. Garbage disposal plant. Garbage dumped at crematory and burned.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrites.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 4, 1921	4.00	0.01	0.03	0.00	0.00	21.00	Negative	Negative
June 4, 1921	6.00	0.04	0.07	0.00	0.30	40.00	Negative	Negative
September 6, 1921	5.00	0.03	0.04	0.00	0.10	50.00	Negative	Negative
December 6, 1921	3.00	0.01	0.03	0.00	0.00	21.00	Negative	Negative

Water Supply of Greenwood, S. C.

Greenwood Water & Electric Plant. Owned by city. Superintendent, A. J. Sproles. In charge of collection of samples, A. J. Sproles. Chairman of local Board of Health, C. H. Blake.

Source: Nine deep wells. Capacity 700,000, additional water supply, 750,000 gallons per day not filtered. Average consumption 500,000 gallons per day. Consumption per capita 40 gallons per day. Service metered 80 per cent. Buildings using city water supply 75 per cent. Sewerage system: 80 per cent of city sewered. Treatment, septic tank on to sand and gravel. No garbage disposal plant. Garbage dumped on vacant lots.

March 5, 1921	8.00	0.02	0.03	0.00	0.00	81.00	Negative	Negative
June 8, 1921	7.00	0.01	0.02	0.00	0.10	181.00	Negative	Negative
September 16, 1921	9.00	0.04	0.04	0.00	0.00	140.00	Negative	Negative
December 9, 1921	7.00	0.03	0.03	0.00	0.40	121.00	Negative	Negative

Water Supply of Hartsville, S. C.

Board of Commission of Public Works. Owned by city. Superintendent, W. H. Garland. In charge of collection of samples, W. H. Garland. Chairman of local Board of Health, D. R. Coker.

Source: Three wells, 3 1-2 inches in diameter 287 feet deep, 4 inches in diameter 252 feet deep, 6 inches in diameter 280 feet deep. Pumped. Capacity 600,000 gallons per day. Not filtered. Average consumption 200,000 gallons per day. Consumption per capita, 60 gallons per day. Service metered. Sewerage system, 65 per cent of city sewered. Sewerage empties into Black Creek. Garbage disposal plant. Garbage burned. 15 per cent new water and sewer being installed.

March 11, 1921	6.00	0.01	0.01	0.00	0.00	28.00	Negative
June 3, 1921	8.00	0.02	0.02	0.00	0.00	26.00	Negative
September 6, 1921	7.00	0.03	0.03	0.00	0.00	17.00	Negative
December 10, 1921	7.00	0.02	0.03	0.00	0.00	31.00	Negative

Water Supply of Kingstree, S. C.

Kingstree Water Works. Owned by city. Superintendent, S. C. Anderson. In charge of collection of samples, S. C. Anderson. Chairman of local Board of Health, T. M. McCutchen.

Source: Two wells one half mile from city, 3 1-2 inches in diameter, 287 feet deep. Pumped. Capacity 237,600 gallons per day. Not filtered. Capacity of plant 237,600 gallons per day. Average consumption 176,000 gallons per day. Consumption per capita 60 gallons per day. Service metered. 40 per cent of buildings using city water supply. Sewerage system: 80 per cent of city sewered. 40 per cent of buildings connected with sewer and have water closets. Garbage disposal plant. Sewerage treated with kerosene and salt. Sewerage empties into Black Creek. No garbage disposal plant. Garbage dumped outside of city and burned.

March 22, 1921	7.00	0.01	0.01	0.00	0.10	206.00	Negative
June 8, 1921	7.00	0.03	0.02	0.00	0.00	270.00	Negative
September 13, 1921	9.00	0.03	0.03	0.00	0.00	253.00	Negative
December 5, 1921	7.00	0.08	0.08	0.00	0.00	235.00	Negative

Water Supply of Lancaster, S. C.

Commission of Public Works. Owned by city. Superintendent, R. S. Harper. In charge of collection of samples, Dr. W. F. Laing. Chairman of local Board of Health, W. R. Thompson.

Source: Two creeks, one and one half miles from city. Capacity 1,000,000 gallons per day. Filtered by mechanical filter. Treatment 1 grain alum per gallon. Capacity of plant 720,000 gallons per day. Average consumption 300,000 gallons per day. Consumption per capita 20 gallons per day. Sewerage system: 70 per cent of city sewered and have water closets. 75 per cent of buildings using city water supply. Service metered. Sewerage empties into Little River. No garbage disposal plant. Garbage dumped outside limits of city and treated with lime when necessary.

March 22, 1921	13.00	0.02	0.05	0.01	0.10	88.00	Negative
August 1, 1921	12.00	0.02	0.04	0.00	0.00	88.00	Negative
September 13, 1921	10.00	0.03	0.04	0.00	0.10	147.00	Negative
December 15, 1921	9.00	0.02	0.05	0.00	0.00	83.00	Negative

RESULTS IN PARTS PER MILLION.—(Continued)

Water Supply of Laurens, S. C.

Municipal Light & Water Plant. Superintendent, J. E. Philpot. In charge of collection of samples, J. E. Philpot. Chairman of local Board of Health, Dr. R. E. Hughes.

Source: Wells and creek within city limits; filtered by mechanical filter. Treatment 1 grain alum per gallon. Capacity of plant 250,000 gallons per day. Average consumption 300,000 gallons per day. Consumption per capita 25 gallons per day. Service metered. 90 per cent of buildings using city water supply. Water chlorinated. One new pump at river increasing water supply. Sewerage system: 75 per cent of buildings connected with sewer and have water closets. Sewerage empties into Little river. No garbage disposal plant. Garbage dumped outside city limits and treated with lime when necessary

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications.	Chemical Indications.
March 21, 1921	8.00	0.01	0.02	0.00	0.20	47.00	Negative	Negative
July 9, 1921	8.00	0.03	0.01	0.00	0.10	139.00	Negative	Negative
September 14, 1921	6.00	0.02	0.03	0.00	0.10	74.00	Negative	Negative

Water Supply of Manning, S. C.

Manning Water Works. Owned by city. Superintendent, E. P. Ervin. In charge of collection of samples, E. P. Ervin.

Source: Well 6 inches in diameter and 485 feet deep. Capacity 86,400 gallons per day. Not filtered. Total capacity of plant 431,400 gallons per day. Average consumption 75,000 gallons per day. Service metered. 80 per cent of buildings using city water supply. Sewerage system: 75 per cent of city sewered. 35 per cent water closets. Sewerage empties into Black River Swamp. No garbage disposal plant.

June 14, 1921	7.00	0.05	0.05	0.005	0.00	171.00	Negative	Negative
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Water Supply of Marion, S. C.

Carolina Gas & Electric Co. Vice President & General Manager, P. A. Tillery, Raleigh, N. C. In charge of collection of samples, T. D. Ector, Div. Superintendent. Chairman of local Board of Health, Dr. C. S. Howell.

Source: Wells, diameter 8 and 6 inches, depth 100 and 150 feet, in city. Capacity 175,000 gallons per day. Service metered. Capacity of plant 175,000 gallons per day. Average consumption 100,000 gallons per day. Consumption per capita 25 gallons per day. About 75 per cent of buildings using city water supply. Sewerage system: Entire city sewered. 40 per cent of buildings connected with sewer and have water closets. Septic tank. Sewerage empties into Catfish Creek. Garbage dumped on "Dump Grounds" outside of city and set on fire. No garbage disposal plant.

March 4, 1921	10.00	0.01	0.02	0.00	0.00	175.00	Negative
June 7, 1921	8.00	0.01	0.02	0.005	0.10	158.00	Negative
September 9, 1921	8.00	0.03	0.03	0.00	0.00	182.00	Negative
December 5, 1921	7.00	0.08	0.07	0.00	0.00	165.00	Negative

Water Supply of McColl, S. C.

City of McColl Water Works. Superintendent, Clarence Powell. In charge of collection of samples, Clarence Powell. Chairman of local Board of Health, Dr. J. C. Moore.

Source: Three wells. 100 feet deep 6 inches in diameter, pumped within city. Capacity 300,000 gallons per day of 24 hours. Not filtered. Average consumption about 100,000 gallons. Service metered. 50 per cent of buildings using city water supply. Sewerage system: Entire city sewered. 85 per cent of buildings have water closets. Sewer empties into Fainter Creek. Sewerage disposal plant. No garbage disposal plant. Garbage hauled outside of city limits.

March 5, 1921	9.00	0.03	0.03	0.001	0.40	39.00	Negative
June 8, 1921	7.00	0.08	0.07	0.01	0.20	72.00	Negative
September 15, 1921	6.00	0.02	0.02	0.005	0.30	60.00	Negative

Water Supply of Mullins, S. C.

Board of Public Works. Owned by town of Mullins. Superintendent, G. M. Brown. In charge of collection of samples, G. M. Brown. Chairman of local Board of Health, Dr. F. L. Martin.

Source: Deep well, ten inches in diameter 350 feet deep, in city. Capacity 125,000 gallons per day. Capacity of plant 125,000 gallons per day. Average consumption 75,000 gallons per day. Service metered. 99 per cent of buildings using city water supply. 50 per cent septic tanks 4-10 of 1 per cent. Sewerage system: 75 per cent of city sewered. 40 per cent of buildings are connected with sewer and have water closets. Sewerage empties into open stream, White Oak. No garbage disposal plant. Garbage dumped outside city limits.

March 7, 1921	7.00	0.07	0.03	0.00	0.00	633.00	Negative
June 14, 1921	10.00	0.07	0.05	0.00	0.00	174.00	Negative
September 13, 1921	10.00	0.02	0.03	0.00	0.00	283.00	Negative
December 15, 1921	10.00	0.01	0.03	0.00	0.00	163.00	Negative

RESULTS IN PARTS PER MILLION.—(Continued)

Water Supply of Newberry, S. C.

Commission of Public Works. Owned by city. Superintendent, H. W. Schumpert. In charge of collection of samples, Dr. R. L. Mayes. Chairman of local Board of Health, Dr. R. L. Mayes.
 Source: Wells, 2 inches in diameter 300 feet deep, 8 inches in diameter 300 feet deep, 10 inches in diameter 300.5 feet deep, 10 inches in diameter 350 feet deep. Pumped by air, in city limits. Capacity 360,000 gallons per day, not filtered. Average consumption 200,000 gallons per day. Consumption per capita 23 gallons per day. Service metered. 95 per cent of buildings using city water supply. Sewerage system: 75 per cent connected with sewer. No connection in tenement houses in cotton mill district. Using a "Pot Dry Closets" sewerage disposal plant. Septic tank and filter. Sewerage empties into Scott's Creek. Incinerator is installed for disposal of garbage.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contaminations.	Chemical Indications of Contamination.
March 4, 1921	24.00	0.01	0.02	0.003	238.00	Negative	Negative
June 6, 1921	35.00	0.02	0.03	0.00	347.00	Negative	Negative
September 9, 1921	35.00	0.02	0.04	0.00	356.00	Negative	Negative
December 6, 1921	27.00	0.02	0.02	0.00	257.00	Negative	Negative

Water Supply of North Augusta, S. C.

North Augusta Works. Owned by town. W. E. Mealing, Chairman Public Service Commission. In charge of collection of samples, W. E. Mealing. Chairman of local Board of Health, W. E. Mealing.
 Source: Springs forming lake in city, not filtered, chlorination plant has been installed. Treatment, 1.50 pounds hypochlorite of lime to 1,500,000 gallons Capacity of plant 330,000 gallons per day. Capacity of supply 400,000 gallons per day. Average consumption 250,000 gallons per day. Service metered. Sewerage system: 80 per cent of city sewered. Sewerage empties into Savannah River. No garbage disposal plant. Garbage dumped outside of town.

March 17, 1921	9.00	0.02	0.10	0.001	56.00	Negative	Negative
June 8, 1921	9.00	0.01	0.03	0.00	72.00	Negative	Negative
September 13, 1921	12.00	0.02	0.03	0.00	76.00	Negative	Negative
December 16, 1921	9.00	0.02	0.05	0.00	34.00	Negative	Negative

Water Supply of Orangeburg, S. C.

Orangeburg Water & Light Plant. Owned by city. Superintendent, F. P. Pearson. Chairman of local Board of Health, V. W. Brabham. Source: Three wells 8 inches in diameter 200 feet deep pumped and flowing in city. Capacity 1,000,000 gallons per day. Not filtered. Capacity of plant 700,000 gallons per day. Average consumption 300,000 gallons per day. Consumption per capita 38 gallons per day. Service metered 80 per cent. Sewerage system: 60 per cent buildings connected with sewerage system and have water closets. Sewerage empties into Edisto River. Garbage dumped at incinerator and burned.

March 16, 1921	7.00	0.01	0.02	0.00	0.00	125.00	Negative
June 2, 1921	7.00	0.01	0.01	0.00	0.00	197.00	Negative
September 12, 1921	8.00	0.03	0.04	0.00	0.00	210.00	Negative
December 14, 1921	9.00	0.02	0.01	0.00	0.00	178.00	Negative

Water Supply of Rock Hill, S. C.

Water & Light Department, city of Rock Hill. Manager, W. P. Goodman. In charge of collection of samples, S. T. Frew. Chairman of local Board of Health, Dr. J. R. Miller.

Source: Catawba River, 6 miles from city. Filtered by mechanical filter. Treatment 3-4 grain of alum per gallon, 1-2 grain lime per gallon, 0.05 grain hypochlorite of lime per gallon. Capacity of plant 1,000,000 gallons per day. Average consumption 750,000 gallons per day. Consumption per capita 50 gallons per day. Service metered. 70 per cent of buildings using city water supply. Sewerage system: 40 per cent of buildings connected with sewerage system and have water closets. Sewerage empties in small streams after limboff treatment, thence into Catawba River. Sewerage disposal plant. Garbage dumped on city farm.

March 9, 1921	7.00	0.01	0.03	0.00	0.10	72.00	Negative
June 21, 1921	6.00	0.02	0.03	0.00	0.10	85.00	Negative
September 27, 1921	6.00	0.03	0.03	0.00	0.00	112.00	Negative
December 15, 1921	6.00	0.03	0.04	0.00	0.00	45.00	Negative

Water Supply of Spartanburg, S. C.

Spartanburg Water Works. Owned by city. Operated by specially chartered Board of Water Commissioners. Superintendent, R. B. Simms. In charge of collection of samples, Dr. C. B. Waller. Chairman of local Board of Health, Dr. H. R. Black.

Source: Chiquapin Creek that flows into reservoir, Shoaley and Lawson's Fork Creeks, one and one half miles from city limits. Capacity 18,000,000 gallons per day. City consumption 2,500,000 gallons per day. Treatment, one half to 4 grains alum owing to turbidity with six to eight hours coagulant run thence through mechanical filter to clear well and treated with chlorine. Consumption per capita 100 gallons per day. Service metered. 75 per cent of city buildings using city water supply. Sewerage system: 55 per cent of buildings connected with sewer and have water closets. Sewerage empties into Lawson's Fork Creek and Fair Forest Creek, 1.8 mile from city limits. Garbage disposal plant and garbage burned, some garbage dumped on outskirts of city.

March 7, 1921	4.00	0.03	0.02	0.00	0.30	21.00	Negative
June 2, 1921	5.00	0.04	0.05	0.00	0.10	40.00	Negative
September 10, 1921	6.00	0.03	0.04	0.00	0.10	32.00	Negative
December 5, 1921	6.00	0.02	0.02	0.00	0.10	29.00	Negative

RESULTS IN PARTS PER MILLION.—(Continued)

Water Supply of Sumter, S. C.

City Water Works. Owned by city. Superintendent, W. W. McKagan. In charge of collection of samples, W. W. McKagan. Chairman of local Board of Health, H. L. Tisdale.

Source: 15 wells 6 inches in diameter, 50 to 430 feet deep, pumped. Pumps in pit 9 feet below surface. 1 mile from city. Capacity steam 1,800,000; electric 1,440,000 gallons per day. Not filtered. Capacity of plant electric 720,000 gallons per day. Service 98 per cent metered.. 75 per cent of buildings connected with sewer and have water closets. Sewerage empties into Turkey Creek and Green Creek after passing through septic tanks. No garbage disposal plant. Garbage dumped in lot outside of city limits.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contaminations.	Chemical Indications of Contamination.
March 14, 1921	11.00	0.01	0.03	0.00	0.00	175.00	Negative	Negative
June 9, 1921	10.00	0.02	0.02	0.00	0.50	48.00	Negative	Negative
September 12, 1921	11.00	0.03	0.03	0.00	0.50	106.00	Negative	Negative
December 13, 1921	9.00	0.03	0.01	0.00	0.70	55.00	Negative	Negative

Water Supply of Timmons ville, S. C.

Board of Public Works. Superintendent, E. J. Lynch. In charge of collection of samples, B. Carter. Chairman of local Board of Health, J. F. Patterson.

Source: Well 8 inches in diameter, 526 feet deep, on outer edge of town. Capacity 300,000 gallons per day. Average consumption 20,000 gallons per day. Consumption per capita 20 gallons per day. Service metered 80 per cent of buildings using city water supply. Sewerage system: 60 per cent of buildings connected with sewer and have water closets. Septic tank. Sewerage empties into Sparrow Swamp. No garbage disposal plant. Garbage burned and dumped into swamp.

March 11, 1921	7.00	0.02	0.03	0.00	0.00	89.00	Negative	Negative
June 7, 1921	7.00	0.02	0.02	0.00	0.00	83.00	Negative	Negative
September 14, 1921	7.00	0.03	0.03	0.00	0.00	71.00	Negative	Negative
December 5, 1921	6.00	0.04	0.04	0.00	0.00	66.00	Negative	Negative

Water Supply of Union, S. C.

Municipal Electric Light & Water Works. Superintendent, W. B. Aiken. In charge of collection of samples, W. B. Aiken. Chairman of local Board of Health, J. F. McClure.
 Source: Creek, 2 miles from city. Capacity 15,000,000 gallons per day. Filtered by mechanical filter. Treatment alum and chlorine. Capacity of plant 1,500,000 gallons per day. Average consumption 750,000 gallons per day. Consumption per capita 33 gallons per day. Service metered. 80 per cent of buildings using city water supply. Sewerage System: 75 per cent of city sewered and have water closets. Sewerage empties into Buffalo Creek. No garbage disposal plant. Garbage dumped outside of city limits.

March 3, 1921	7.00	0.05	0.03	0.002	0.10	51.0	Negative
July 4, 1921	8.00	0.02	0.04	0.00	0.10	84.0	Negative
September 17, 1921	7.00	0.03	0.04	0.00	0.00	102.0	Negative
December 2, 1921	6.00	0.01	0.02	0.001	0.10	48.0	Negative

Water Supply of Winnsboro, S. C.

Board of Public Works. Owned by town. Superintendent, T. R. Ellison. In charge of collection of samples, T. R. Ellison. Chairman of local Board of Health, Dr. J. E. Douglas.
 Source: Creek 2 miles from city. Filtered. Capacity 1,000,000 gallons. Treatment alum. Average consumption 75,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered. 80 per cent of buildings using city water supply. Sewerage system: 85 per cent of city sewered, 75 per cent of buildings connected with sewer. Sewerage empties into Cathcart's Branch 3-4 mile from city. Septic tank. No garbage disposal plant. Garbage dumped in low waste places.

March 14, 1921	7.00	0.02	0.03	0.00	0.20	82.00	Negative
June 7, 1921	9.00	0.01	0.03	0.00	0.10	65.00	Negative
September 14, 1921	10.00	0.02	0.04	0.00	0.10	56.00	Negative

Water Supply of Woodruff, S. C.

Board of Public Works. Owned by town. Superintendent, T. W. Cox. In charge of collection of samples, T. W. Cox. Chairman of local Board of Health, T. W. Cox.
 Source: Wells one half mile from city. Depth 400 and 141 feet deep. Capacity 191,000 gallons per day. Service metered. 40 per cent of buildings using city water supply. Sewerage system: 75 per cent of city sewered, 40 per cent of buildings connected with sewer and have water closets. Two septic tanks. Sewerage empties into branch and creek. No garbage disposal plant. Garbage dumped in tank.

March 24, 1921	9.00	0.02	0.01	0.00	0.00	204.00	Negative
June 14, 1921	5.00	0.01	0.02	0.00	0.00	243.00	Negative
September 22, 1921	8.00	0.02	0.03	0.00	0.00	271.00	Negative
December 8, 1921	7.00	0.02	0.01	0.00	0.00	129.00	Negative

RESULTS IN PARTS PER MILLION.—(Continued)

Water Supply of York, S. C.

York Water Plant. Owned by city. Superintendent, J. O. Wray. In charge of collection of samples, J. O. Wray. Chairman of local Board of Health, Dr. M. T. Walker.

Source: Branch 3.4 mile from city. Capacity 800,000 gallons per day. Capacity of plant 500,000 gallons per day. Average consumption 200,000 gallons per day. Consumption per capita 35 gallons per day. Service metered. 70 per cent of buildings connected with city water supply. Sewerage system: 50 per cent of buildings connected with sewer and have water closets. Sewerage empties into Fishing Creek on east and Turkey Creek on west. No garbage disposal plant. Garbage dumped on wornout land outside city limits.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contaminations.	Chemical Indications of Contamination.
March 14, 1921	7.00	0.02	0.03	0.00	0.20	82.00	Negative	Negative
August 11, 1921	6.00	0.02	0.03	0.01	0.10	110.00	Negative	Negative
October 10, 1921	8.00	0.02	0.02	0.00	0.10	80.00	Negative	Negative
December 16, 1921	6.00	0.03	0.04	0.00	0.10	106.00	Negative	Negative

FINANCIAL STATEMENT

The following is a correct statement of the expenditures of the State Board of Health for the fiscal year 1921. All claims against the Board are itemized and rendered in duplicate, the original being attached to warrant of Comptroller General and forwarded to his office for payment—the duplicate being filed in this office.

SUPERVISION AND CONTROL OF HEALTH.

A. Personal Service.		
A-3. Fees		\$1,310 00
B. Contract and Open Order Service.		
B-1. Transportation		1,191 00
C. Supplies.		
C-4. Office Supplies		38 00
D. Fixed Charges and Contributions.		
D-10. Contributions		15 00
Total Supervision and Control of Health.....		<u>\$2,554 00</u>
Appropriation	\$2,000 00	
Funds Transferred by Budget Commission.....	554 00	
Total	<u>\$2,554 00</u>	
Expenditures	<u>2,554 00</u>	
Balance		00

SUPERINTENDENCE AND ACCOUNTS.

A. Personal Service.		
A-1. Salaries	\$9,210 00	
A-3. Fees	2 00	
		<u>\$9,212 00</u>
B. Contract and Open Order Service.		
B-1. Transportation	2,327 12	
B-2. Communication	461 54	
B-3. Repairs	13 00	
B-4. Printing and Advertising.....	797 31	
		<u>3,598 97</u>
C. Supplies.		
C-4. Office Supplies	574 99	
C-6. Medical Supplies	2 23	
C-7. Refrigerating Supplies	91 20	
C-15. Other Supplies	1 10	
		<u>669 52</u>
D. Fixed Charges and Contributions.		
D-3. Rent	\$1,003 50	
D-5. Insurance	15 30	
D-10. Contributions	63 00	
		<u>1,081 80</u>
F. Materials.		
F-3. Building Materials	\$10 00	10 00
G. Equipment		
G-1. Office Equipment	55 01	55 01
Total Superintendence and Accounts.....		<u>\$14,627 30</u>
Appropriation	\$14,120 00	
Funds Transferred by Budget Commission	535 41	
Total Receipts	<u>\$14,655 41</u>	
Expenditures	<u>14,627 30</u>	
Balance		28 11

CONTROL OF EPIDEMIC DISEASES.

A. Personal Service.		
A-1. Salaries	\$3,000 00	
A-3 Fees	175 00	
Total Personal Service.....		\$3,175 00
B. Contract and Open Order Service.		
B-1. Transportation	\$781 99	
Total Transportation		781 99
C. Supplies.		
C-6. Medical Supplies	28,159 87	
Total Supplies		28,159 87
Total Control of Epidemic Diseases.....		\$32,116 86
Appropriation	\$25,700 00	
Funds Transferred by Budget Commission.....	7,360 00	
Total Receipts	\$33,060 00	
Total Expenditures	32,116 86	
Balance	\$943 14	
Bills outstanding?		

HYGIENIC LABORATORY.

A. Personal Service.		
A-1. Salaries	\$9,000 00	
A-2. Wages	500 00	
A-3.	21 00	
Total Personal Service.....		\$9,521 00
B. Contract and Open Order Service.		
B-1. Transportation	93 25	
B-2. Communication	116 83	
B-3. Repairs	81 70	
Total Contract and Open Order Service.....		291 78
C. Supplies.		
C-2. Fuel Supplies	297 02	
C-3. Feed Supplies	209 46	
C-4. Office Supplies	719 20	
C-5. Laundry and Disinfecting Supplies.....	7 00	
C-6. Medical Supplies	344 50	
C-15. Other Supplies	400 86	
Total Supplies		1,977 54
D. Fixed Charges and Contributions.		
D-10. Contributions		20 00
G. Equipment.		
G-1. Office Equipment	141 05	
G-6. Live Stock	17 25	
Total Equipment		158 30
Total Hygienic Laboratory.....		\$11,968 62
Appropriation	\$11,650 00	
Funds Transferred by Budget Commission, December 29, 1921	319 00	
Total Receipts		\$11,969 00
Total Expenditures	11,968 62	
Balance	38	

BUREAU OF VITAL STATISTICS.

A. Personal Service.		
A-1. Salaries	\$4,980 00	
Total Personal Service.....		\$4,980 00
B. Contract and Open Order Service.		
B-1. Transportation	41 55	
B-2. Communication	76 75	

B-3. Repairs	10 40	
B-5. Other Contract and Open Order Service.....	280 15	
Total Contract and Open Order Service.....		408 85
C. Supplies.		
C-4. Office Supplies	908 39	
Total Supplies		908 39
G. Equipment.		
G-1. Office Equipment	127 10	
Total Equipment		127 10
Total Bureau Vital Statistics.....		\$6,424 34
Appropriation	\$6,480 00	
Expenditures	6,424 34	
Balance	\$55 66	
Outstanding Bills?		

BUREAU OF CHILD HYGIENE.

A. Personal Service.		
A-1. Salaries	\$7,573 50	
Total Personal Service.....		\$7,573 50
B. Contract and Open Order Service.		
B-1. Transportation	2,275 84	
B-2. Communication	213 89	
B-3. Repairs	8 75	
B-4. Printing and Advertising.....	621 05	
B-5. Other Contract and Open Order Service.....	45 00	
Total		3,164 44
C. Supplies.		
C-1. Food Supplies	4 00	
C-4. Office Supplies	715 95	
C-8. Educational Supplies	328 83	
C-15. Other Supplies	72 10	
Total Supplies		1,120 88
D. Fixed Charges and Contributions.		
D-3. Rent	330 00	
D-10. Contributions	5 00	
Total		335 00
G. Equipment.		
G-1. Office Equipment	249 55	
G-7. Educational and Recreational Supplies.....	32 85	
Total		282 40
Appropriation	\$12,480 00	
Expenditures	12,476 22	
Balance	\$3 78	

MALARIAL COOPERATIVE WORK.

A. Personal Service.		
A-1. Salaries	\$4,760 00	
A-2. Wages	4,862 36	
Total Personal Service.....		\$9,622 36
B. Contract and Open Order Service.		
B-1. Transportation	\$1,532 05	
B-2. Communication	100 34	
B-3. Repairs	8 38	
B-4. Printing and Advertising.....	20 62	
Total Contract and Open Order Service.....		1,661 39
C. Supplies.		
C-4. Office Supplies	350 65	
C-15. Other Supplies	2,321 18	
Total Supplies		2,671 83

D. Fixed Charges and Contributions.		
D-3. Rent	240 00	
D-5. Insurance	39 00	
Total Fixed Charges and Contributions.....		279 00
G. Equipment.		
G-1. Office Equipment	146 25	
G-2. Medical and Surgical Equipment.....	187 24	
G-9. Other Equipment	431 10	
Total Equipment		764 59
Total Malarial Cooperative Work.....		\$14,999 17
Appropriation	\$15,000 00	
Expenditures	14,999 17	
Balance		83

BUREAU OF RURAL SANITATION.

A. Personal Service.		
A-1. Salaries	\$7,630 38	
Total Personal Service.....		\$7,630 38
B. Contract and Open Order Service.		
B-1. Transportation	\$1,917 88	
B-2. Communication	87 19	
Total Contract and Open Order Service.....		2,005 07
C. Supplies.		
C-4. Office Supplies	146 76	
Total Supplies		146 76
D. Fixed Charges and Contributions.		
D-3. Rent	216 00	
Total Fixed Charges and Contributions.....		216 00
Appropriation	\$10,000 00	\$9,998 21
Expenditures	9,998 21	
Balance	\$71 79	

HOTEL INSPECTION FUND.

A. Personal Service.		
A-1. Salaries	\$3,600 00	
Total Personal Service.....		\$3,600 00
B. Contract and Open Order Service.		
B-1. Transportation	\$1,716 19	
B-3. Repairs	63 35	
B-5. Other Contract and Open Order Service.....	68 60	
Total Contract and Open Order Service.....		1,848 14
C. Supplies.		
C-4. Office Supplies	34 30	
C-15. Other Supplies	11 17	
Total Supplies		45 47
D. Fixed Charges and Contributions.		
D-5. Insurance	50 00	
Total Fixed Charges and Contributions.....		50 00
G. Equipment.		
G-4. Motor Vehicles and Equipment.....	456 39	
Total Equipment		456 39
Total Hotel Inspection Fund.....		\$6,000 00
Appropriation	\$6,000 00	
Expenditures	6,000 00	
Balance		00

SOUTH CAROLINA AND PALMETTO SANATORIA.

A. Personal Service.		
A-1. Salaries	\$17,173 31	
A-2. Wages	1,509 03	
A-3. Fees	210 00	
Total Personal Service.....		\$18,892 34
B. Contract and Open Order Service.		
B-1. Transportation	860 05	
B-2. Communication	341 61	
B-3. Repairs	2,300 42	
B-4. Printing and Advertising.....	174 28	
B-5. Other Contract and Open Order Service.....	1,033 95	
Total Contract and Open Order Service.....		4,710 31
C. Supplies.		
C-1. Food Supplies	\$8,598 47	
C-2. Fuel Supplies	2,893 77	
C-3. Feed Supplies	3,637 25	
C-4. Office Supplies	86 11	
C-5. Laundry and Disinfecting Supplies.....	18 35	
C-6. Medical Supplies	651 05	
C-7. Refrigerating Supplies	809 60	
C-8. Educational and Recreational Supplies.....	9 35	
C-9. Motor Vehicle Supplies	13 75	
C-10. Agricultural and Botanical Supplies.....	654 21	
C-15. Other Supplies	1,535 21	
Total Supplies		18,907 12
D. Fixed Charges and Contributions.		
D-4. Interest	8 57	
D-5. Insurance	1,250 00	
Total Fixed Charges and Contributions.....		1,258 57
F. Materials.		LL
F-2. Sewer and Water Materials.....	377 86	
Building Materials	997 66	
F-4. Other Materials	1,339 32	
Total Materials		3,714 84
G. Equipment.		
G-3. Household Equipment	1,734 48	
G-4. Motor Vehicles and Equipment.....	574 93	
G-6. Live Stock	410 00	
Total Equipment		2,719 41
H. Lands and Structures.		
H-3. Buildings	2,650 28	
H-5. Other Lands and Structures.....	236 65	2,886 93
Total South Carolina and Palmetto Sanitoria.....		\$53,089 52
Appropriation	\$61,939 95	
Funds Deducted by Budget Commission.....	8,768 41	
Funds Available for Sanitoria.....	\$53,171 54	
Expenditures	53,089 52	53,171 54
Balance	\$82 02	
Outstanding Bills?		
F. Materials.		
F-2. Sewer and Water Materials.....	377 86	
F-3. Building Materials	997 66	
F-4. Other Materials	1,339 32	
Total Fixed Charges and Contributions.....		1,158 57

